

AD-A152 647

DEPARTMENT OF THE ARMY
JUSTIFICATION OF ESTIMATES FOR FISCAL YEAR 1986
SUBMITTED TO CONGRESS

FEBRUARY 1985



Part 2

AIRCRAFT

DEPT OF THE ARMY
ELECTED
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PROCUREMENT

AIRCRAFT

WEAPONS & TRACKED COMBAT VEHICLES

AMMUNITION

PROGRAMS

MISSILES

OTHER

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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) In justification of programs requested, this document, in separate volume for each of the five Procurement Appropriations, and one separate volume for Construction Programs, provides backup data for the Army Budget submission for FY 1986. Included are Summaries of Requirements, Program and Financing State- ments and Selected Data Sheets. (These volumes are unclassified). <i>AD A152617</i>		

AIRCRAFT PROCUREMENT, ARMY

Section 1

Budget Appendix Extract

Appropriation Language

Program and Financing Schedule

Object Classification Schedule

1-1 February 1985

APPROPRIATION LANGUAGE

For construction, procurement, production, modification, and modernization of aircraft, equipment, including ordnance, ground handling equipment, spare parts, and accessories therefor; specialized equipment and training devices; expansion of public and private plants, including the land necessary therefor, for the foregoing purposes, and such lands and interests therein, may be acquired, and construction prosecuted thereon prior to approval of title; and procurement and installation of equipment, appliances, and machine tools in public and private plants, reserve plant and Government and contractor-owned equipment layaway; [and other expenses necessary for the foregoing purposes; \$3,940,900,000, of which \$642,600,000 shall be available for the purchase of UH-60/EH-60 BLACK HAWK/QUICKFIX helicopters under a multiyear contract and \$431,900,000 shall be available for the purchase of CH-47 Chinook helicopter modifications under a multiyear contract.] \$3,892,500 to remain available for obligation until September 30, [1987] 1988 [provided, that appropriations available herein shall be used to procure no less than eighteen AH-64 APACHE attack helicopters for assignment to the Army National Guard, (10 U.S.C. 2353, 2361, 3012, 4531-32: Department of Defense Appropriation Act, 1985; additional authorizing legislation to be proposed).]

1-2 February 1985

04 Feb 85
FISCAL YEAR 1982

Aircraft Procurement, Army
Program and Financing (in Thousands of dollars)

Identification code	21-2031-0-1-051	Budget Plan (amounts for PROCUREMENT actions programmed)			Obligations		
		1984 actual	1985 est.	1986 est.	1984 actual	1985 est.	1986 est.
Program by activities:							
Direct program:							
00 0101	Aircraft				65,062		
00 0201	Modification of aircraft				49,704		
00 0301	Spares and repair parts				66,684		
00 0401	Support equipment and facilities				10,924		
00 9101	Total direct program				192,344		
31 0101	Reimbursable program				-10,937		
10 0001	Total				181,407		
Financing:							
Offsetting collections from:							
11 0001	Federal funds(-)				7,176		
13 0001	Trust funds(-)				32,684		
17 0001	Recovery of prior year obligations(-)				-51,684		
21 4002	Unobligated balance available, start of year				-166,039		
21 4007	For completion of prior year budget plans						
21 4007	Reprogramming from/to prior year budget plan						
25 0001	Unobligated balance lapsing						
					-16,456		
					16,456		
39 0001	Budget authority						

Aircraft Procurement, Army		04 Feb 85			
Program and Financing (in thousands of dollars)		FISCAL YEAR 1983			
Identification code	21-2031-0-1-001	Budget Plan (amounts for PROCUREMENT actions programmed)		Obligations	
		1984 actual	1985 est	1984 actual	1985 est
Program by activities					
Direct program:					
00 0101	Aircraft			91,474	76,966
00 0201	Modification of aircraft			74,429	36,434
00 0301	Spare and repair parts			95,537	51,606
00 0401	Support equipment and facilities			22,826	14,741
00 010:	Total direct program			283,966	183,747
01 0101	Reimbursable program			15,981	36,071
10 0001	Total			299,947	219,818
Financing					
Offsetting collections from					
11 0001	Federal funds(-)			3,516	
13 0001	Trust funds(-)			3,732	
17 0001	Recovery of prior year obligations(-)			-39,186	
21 4002	Unobligated balance available, start of year				
21 4007	For completion of prior year budget plans				
21 4007	Reprogramming from/to prior year budget plans	12,700		-476,144	-219,818
22 4001	Unobligated balance transferred, not	-12,700			
24 4002	Unobligated balance available, end of year			-12,700	
24 4002	For completion of prior year budget plans			219,818	
39 0001	Budget authority				

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IDENTIFICATION CODE 21-2031-0-1-031

SECRET

Modification of Aircraft

and of the equipment and facilities

10-10-1964

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Difficulties collecting are from

Trust funds (1)

1. The Commission has received information from the Ministry of Health, that the Ministry is planning to introduce a new system of health insurance, which will be based on the principle of universal coverage. The Commission is of the opinion that the proposed system is a step in the right direction, and it is recommended that the Ministry should proceed with the implementation of the system.

[illegible]

But I can't come in my pants!

437 004234 1000mg

Budget Authority

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		Aircraft Procurement, Army		04 Feb 85	
		Program and Financing (in Thousands of dollars)		FISCAL YEAR 1985	
		Budget Plan (accounts for PROCUREMENT actions programmed)		Deliveries	
identification code	21-2031 0-1-0-1	1983 actual	1985 est	1984 actual	1985 est 1986 out
Program by activities					
Direct program					
00 0101	Aircraft	2,039,000		1,692,370	203,900
00 0201	Modification of aircraft	668,000		723,440	86,800
00 0301	Spares and repair parts	675,500		560,997	67,590
00 0401	Support equipment and facilities	317,800		263,774	31,780
00 9101	Total direct program	3,900,700		3,237,581	390,070
01 0101	Reimbursable program	109,800		60,390	21,960
10 0001	Total	4,010,500		3,297,971	412,030
Financing					
Offsetting collections from					
11 0001	Federal funds(-)	-41,800		-41,800	
13 0001	Trust funds(-)	-66,000		-66,000	
21 4002	Unobligated balance available, start of year for completion of prior year budget plans			712,529	-712,529
24 4002	Unobligated balance available, end of year for completion of prior year budget plans				300,499
30 0001	Budget authority	3,900,700		3,900,700	
40 0001	Budget authority	3,940,900		3,940,900	
41 0001	Appropriation	-40,200		-40,200	
43 0001	Transferred to other accounts				
43 0001	Appropriation (adjusted)	3,900,700		3,900,700	

1-6 February 1985

Aircraft Procurement, Army		04 Feb 85	
Program and financing (in thousands of dollars)		FISCAL YEAR 1985	
Budget plan (amounts for PROCUREMENT actions programed)		Obligations	
Identification code	21-2031-0-1-051	1984 actual	1985 est.
Program by activities:			
Direct program:			
00 0101	Aircraft	1,842,500	1,829,275
00 0201	Modification of aircraft	786,100	654,123
00 0301	Spares and repair parts	849,700	788,251
00 0401	Support equipment and facilities	312,200	259,126
00 9101	Total direct program	3,892,500	3,230,775
01 0101	Reimbursable program	145,900	80,190
10 0001	Total	4,038,300	3,310,965
Financing:			
11 0001	Offsetting collections from Federal funds(-)	-68,900	-68,900
13 0001	Trust funds(-)	-76,900	-76,900
24 4002	Unobligated balance available, end of year		727,335
40 0001	Budget authority (Appropriation)	3,892,500	3,892,500

1-7 February 1985

Aircraft Procurement, Army
Program and Financing (in thousands of dollars)

04 Feb 85

Identification code	21-2031-0-1-001	Program by activities	Budget Plan (amounts for PROCUREMENT actions programmed)			Obligations		
			1984 actual	1985 est	1986 est	1984 actual	1985 est	1986 est
Program by activities								
Direct program								
00 0101		Aircraft	1,804,401	2,039,000	1,842,500	1,788,132	1,821,305	1,852,691
00 0201		Modification of aircraft	569,646	464,000	748,100	558,605	849,173	787,798
00 0301		Spare and repair parts	596,850	675,900	949,700	597,489	736,375	897,621
00 0401		Support equipment and facilities	166,155	317,600	312,200	105,076	361,414	302,536
00 9101		Total direct program	3,237,132	3,900,700	3,852,500	3,150,702	3,764,267	3,840,646
01 0101		Reimbursable program	81,034	109,300	145,600	47,456	114,664	122,537
10 0001		Total	3,318,166	4,010,500	4,038,500	3,198,160	3,878,931	3,963,183
Financing								
Offsetting collections from								
11 0001		Federal funds ()	57,275	41,800	68,900	46,585	41,800	68,900
13 0001		Trust funds ()	23,759	68,000	76,900	12,707	68,000	76,900
17 0001		Recovery of prior year obligations ()				90,872		
21 4002		Unobligated balance available, start of year				661,183	820,948	952,717
21 4007		For completion of prior year budget plans						
22 4001		Reprogramming from/to prior year budget plan	4,356	600		12,700	600	
22 4001		Unobligated balance transferred, not	12,700	600				
24 4002		Unobligated balance available, end of year				820,948	952,717	1,027,834
24 4002		For completion of prior year budget plans	16,436	600		16,436	600	
25 0001		Unobligated balance (ending)						
38 0001		Budget authority	3,246,532	3,901,300	3,892,500	3,236,532	3,901,300	3,892,500
Budget authority								
40 0001		Appropriation	3,214,048	3,940,900	3,892,500	3,214,048	3,940,900	3,892,500
41 0001		Transferred to other accounts ()		40,200			40,200	
42 0001		Transferred from other accounts	22,484			22,484		
43 0001		Appropriation (adjusted)	3,236,532	3,900,700	3,892,500	3,236,532	3,900,700	3,892,500
50 0001		Reappropriation		600			600	
Retention of obligations to outlays								
71 0001		Obligations incurred, not				3,164,282	3,769,131	3,817,383
72 4001		Unobligated balance, start of year				2,573,989	3,463,528	4,493,159
74 4001		Obligated balance, end of year				3,463,528	4,493,159	5,007,342
77 0001		Adjustments in expired accounts				19,301		
78 0001		Adjustments in unexpired accounts				90,872		
90 0001		Outlays	2,164,570	2,749,500		2,164,570	2,749,500	3,303,200

1-8 February 1985

Aircraft Procurement, Army		04 Feb 85		
Object Classification (in thousands of dollars)				
Idnification code	21-203-0-1 051	1984 actual	1985 est. 1986 est.	
Direct obligations				
12 5004	Other	409,591	528,997	537,690
12 6001	Supplies and materials	378,094	602,283	614,503
13 1001	Equipment	2,363,027	2,634,997	2,686,453
19 9001	Total Direct obligations	3,150,702	3,764,267	3,840,646
Reimbursable obligations				
22 5004	Other	6,169	16,053	17,105
22 6001	Supplies and materials	8,885	16,346	19,606
23 1001	Equipment	38,894	83,263	85,776
29 9001	Total Reimbursable obligations	47,498	114,664	122,537
99 9901	Total obligations	3,198,160	3,878,931	3,963,183

AIRCRAFT PROCUREMENT, ARMY

Section 2

Budget Activity Justifications

Activity 1 - Aircraft

Activity 2 - Modification

Activity 3 - Spares and Repair Parts

Activity 4 - Support Equipment and Facilities

1-10 February 1985

Department of the Army Annual Budget Estimates JUSTIFICATION	Appropriation Aircraft Procurement, Army		FY 1986	
			Budget	
	(Thousands of Dollars)			
Program or Budget Project Account	Actual	Estimate	Estimate	Estimate
Budget Program - Activity 1, Aircraft.	FY 1984	FY 1985	FY 1986	FY 1987
Direct Obligation or Direct Budget Plan	1,804,481	2,039,000	1,842,500	1,809,800
Direct Obligation				

Section 1 - PURPOSE AND SCOPE

Provides for procurement and manufacture of airplanes, helicopters, and associated aircraft armament and avionics equipment.

Section 2 - JUSTIFICATION OF FUNDS REQUESTED

(\$ in Thousands)

FY 1986	FY 1987
\$143,000	\$164,900

EH-60A QUICK FIX Electronic Helicopter (Multiyear Procurement) - (P-1 Line Items 4 and 5).

The FY 1986 request includes \$118.6 million for the procurement of 18 EH-60A QUICK FIX helicopters. Additionally, \$24.4 million is requested for advance procurement of long leadtime engine and airframe components required to support the FY 1987 production. QUICK FIX utilizes the BLACK HAWK airframe to deploy on-board Electronic Warfare (EW) equipment designed to identify, locate, listen, and disrupt enemy command and control communications. Funding in FY 87 will buy an additional 18 aircraft and long lead material for FY 1988 aircraft.

1-11 February 1985

	(\$ in Thousands)
<u>FY 1986</u>	<u>FY 1987</u>
\$100	\$100

Modifications less than \$900 Thousand - (P-1 Line Item 30).

The \$1.1 million requested in FY 1986 and FY 1987 is for various modification requirements.

	(\$ in Thousands)
<u>FY 1986</u>	<u>FY 1987</u>
\$17,000	\$16,700

Aircraft 9MW - (P-1 Line Item 31).

A total of \$17.0 million is requested in FY 1986 and \$16.7 million in FY 1987 for specialized aviation of a classified nature.

Department of the Army		Appropriation		FY 1986	
Annual Budget Estimates		Aircraft Procurement, Army			
JUSTIFICATION					
Program or Budget Project Account		(Thousands of Dollars)		Budget	
		Actual	Estimate	Estimate	Estimate
Budget Program - Activity 2, Aircraft		FY 1984	FY 1985	FY 1986	FY 1987
Modifications.					
Direct Obligation or Direct Budget Plan		669,646	868,000	88,100	892,100
Direct Obligation					

Section 1 - PURPOSE AND SCOPE

Provides for modification of items and upgrade of equipment procured by the Aircraft Procurement, Army appropriation, including modification kits. Installation costs are not included unless the manufacturer provides parts and labor under a single contract (excluding normal GFE) and this results in an end item reconfigured to a new series designation or new operational capability.

Section 2 - JUSTIFICATION OF FUNDS REQUESTED

(\$ in Thousands)
FY 1986 FY 1987
\$27,700 \$29,700

OV-1 Mohawk Surveillance Airplane - (P-1 Line Item 11).

The \$27.7 million requested in FY 1986 provides non-recurring engineering to support block improvement for a reduced fleet of OV/RV-1 aircraft and continued procurement and installation of the stall warning and anti-ice modifications. FY 87 funding continues block improvement, stall warning, anti-ice and procurement of aircraft survivability equipment.

(\$ in Thousands)	
FY 1986	FY 1987
\$500	-0-

RC-12D Reconnaissance Airplane - (P-1 Line Item 12).

The \$.5 million requested in FY 1986 is for procurement of modification kits for the continuous wave radar jammer.

(\$ in Thousands)	
FY 1986	FY 1987
\$500	-0-

RV-1D Reconnaissance Airplane - (P-1 Line Item 13).

The \$.5 million requested in FY 1986 is for procurement of modification kits for the continuous wave radar jammer.

(\$ in Thousands)	
FY 1986	FY 1987
\$124,500	\$113,800

AH-1 COBRA-TOW Attack Helicopter - (P-1 Line Item 15).

A total of \$124.5 million is requested in FY 1986 for a variety of COBRA modification programs. This includes the COBRA Night Program (C-Nite) (\$21.7 million), the COBRA Fleet Life Extension Program (C-FLEX) (\$37.5 million), and conversion of 29 AH-1G aircraft to AH-1S configuration (\$47.3 million). The remaining \$18.0 million is requested for Laser Augmented Airborne TOW, optical improvements and safety related improvements. A total of \$113.8 million is requested in FY 1987 for the C-FLEX, C-NITE, and Laser Augmented TOW optical improvements.

(\$ in Thousands)
 FY 1986 FY 1987
 \$378,100 \$327,500

CH-47 CHINOOK Cargo Helicopter (Multiyear Procurement) - (P-1 Line Items 17 and 18)

A total of \$378.1 million is requested in FY 1986 for continuation of the CH-47D modernization program and for fleet modifications to convert the T-55-L-11D engine to the T-55-L-712 configuration. The CH-47 Modernization program includes improvements to the current CH-47A, B, C fleet to modernize it to the greatly improved CH-47D configuration. Modifications include new fiberglass rotor blades; new engines, transmission and drive system; modularized hydraulics; electrical system; advanced flight control system; triple hook cargo system and a new auxiliary power unit. These improvements increase the aircraft capability for lift and endurance and extends the useful life of the fleet beyond the year 2000. The features greatly enhance reliability, maintainability, productivity, survivability and safety of the Active Army's only medium-lift cargo helicopter. In FY 1987, \$327.5 million is requested for continuation of the fleet modernization to the improved CH-47D configuration. Funding also permits the continuation of the T-55-L-11D engine conversion to the T-55-L-712 configuration. This program is a multiyear procurement beginning in FY 1985 and continuing through FY 1989.

(\$ in Thousands)
 FY 1986 FY 1987
 \$500 \$500

CH-54 TARHE Cargo Helicopter - (P-1 Line Item 19)

A total of \$5 million is requested in FY 1986 for modifications to the CH-54 fleet. The program includes product improvements such as avionics/wiring update, new N2 sensing cable, improved Auxiliary Power Unit (APU) electric start, and reliability improvements. The CH-54 is the Army's only heavy lift helicopter and is the platform required for over the beach container movement. The entire fleet is assigned to the reserve components. The planned improvements are designed to keep the aircraft operational through the year 2000. Funds requested in FY 87 will permit continuation of this program.

(\$ in Thousands)	
FY 1986	FY 1987
\$12,200	\$37,900

UH-1 Mods - (P-1 Line Item 23).

A total of \$12.2 million is requested in FY 1986 to continue avionics replacement on the UH-1 aircraft fleet. The UH-1 has reached an age where most of the avionics cannot be logistically supported and are no longer in production. For the UH-1 to continue to be used effectively and efficiently, an avionics replacement program must be sustained in FY 1986. Funds requested in FY 1987 will permit continuation of this program.

(\$ in Thousands)	
FY 1986	FY 1987
\$15,400	\$14,400

UH-60A Mods - (P-1 Line Item 24).

A total of \$15.4 and \$14.4 million is requested in FY 1986 and FY 1987, respectively, to continue retrofitting fielded UH-60 BLACK HAWKS with provisions to accommodate the External Stores Support System (ESSS). ESSS provides the Army with a self-deployment and extended range capability in support of the Rapid Deployment Force mission. Other improvements include the installation of the Hover Infrared Suppressor System, Wire Strike Protection System and Cockpit Night Vision Goggle (NVG) compatibility modification. FY 1987 funding will continue the improvements mentioned above.

(\$ in Thousands)	
FY 1986	FY 1987
\$210,600	\$248,500

Army Helicopter Improvement Program (AHIP) - (P-1 Line Items 25 and 26).

A total of \$210.6 million is requested in FY 1986 to modify 56 OH-58A airframes to the OH-58D (AHIP) configuration. This request also includes funds for advance procurement (\$51.8 million) for modification of 60 OH-58A airframes in FY 1987. Modification of the OH-58A includes the addition of a Mast-Mounted Sight (MMS) to achieve a day, night, adverse weather target acquisition and designation capability, an integrated cockpit with improved communications and navigation equipment, a more powerful engine, redesign of the main transmission and tail rotor drive train, and the installation of a composite, four bladed main rotor system and composite tail rotor. Advance procurement funding permits the procurement of long leadtime transmission components, gearboxes, main rotor masts, material for main rotor blades, electrical components, castings, forgings, bearings, hydraulic actuators, sensors, microelectronic parts, engines, and avionics. The AHIP will provide commanders with a significantly improved scout helicopter to conduct command and control, reconnaissance, surveillance, security and target acquisition, designation functions under day, night, and adverse weather conditions. In FY 1987, \$248.5 million is requested to exercise the fourth production contract to modify 60 OH-58A airframes to the OH-58D (AHIP) configuration, and advance procurement (\$81.8 million) for modification of 94 OH-58A airframes in FY 1988.

(\$ in Thousands)	
FY 1986	FY 1987
\$1,000	\$8,200

Airborne Avionics - (P-1 Line Item 29).

The \$1.0 million requested in FY 1986 will provide airborne avionics modifications and the initiation of upgrades for the tactical approach radar. \$8.2 million in FY 1987 will continue these product improvement programs.

1-17 February 1985

(\$ in Thousands)	
FY 1986	FY 1987
<u>\$100</u>	<u>\$100</u>

Modifications less than \$900 Thousand - (P-1 Line Item 30).

The \$1.1 million requested in FY 1986 and FY 1987 is for various modification requirements.

(\$ in Thousands)	
FY 1986	FY 1987
<u>\$17,000</u>	<u>\$16,700</u>

Aircraft 9MW - (P-1 Line Item 31).

A total of \$17.0 million is requested in FY 1986 and \$16.7 million in FY 1987 for specialized aviation of a classified nature.

Department of the Army		Appropriation		FY 1986	
Annual Budget Estimates		Aircraft Procurement, Army			
JUSTIFICATION					
Program or Budget Project Account		(Thousands of Dollars)		Budget	
Budget Program - Activity 3, Spares and		Actual	Estimate	Estimate	Estimate
Repair Parts		FY 1984	FY 1985	FY 1986	FY 1987
Direct Obligation or Direct Budget Plan		596,850	675,900	949,700	1,198,300
Direct Obligation					

Section 1 - PURPOSE AND SCOPE

Provides for procurement of depot repairable spares and repair parts including provisioning (initial issue), replenishment, mobilization reserve, and avionics spares.

Section 2 - JUSTIFICATION OF FUNDS REQUESTED

(\$ in Thousands)

FY 1986	FY 1987
\$94,700	\$1,198,300

Spares and Repair Parts - (P-1 Line Item 32).

Initial Spares: A total of \$280.4 million is requested in FY 1986 and \$163.4 million in FY 1987 to procure spares and repair parts in support of initial fielding of new or modified systems. These funds also support the procurement of aircraft engines and engine modules over the life cycle of the aircraft. Spares are an integral part of the development of any aircraft system (new procurement or modification). Initial spares are ordered to support the major item delivery and fielding schedule to preclude grounding the system for lack of spare parts. Aircraft end items supported in FY 1986 are:

		(Dollars in Millions)	
AH-64	\$142.8	OV-18A	\$1.5
UH-60A	20.8	RV-1	1.1
EH-60A	17.4	AH-1S	3.4
RC-12D	13.7	CH-47	18.5
EH-1	1.6	AH1P	50.0
		Safety-of-Flight	\$1.8
		Ground Support Equipment	.7
		Night Vision Goggles	3.4
		ASE & Avionics	3.1
		SINCGARS	.6

1-19 February 1985

Replenishment Spares: A total of \$669.3 million is requested in FY 1986 and \$1,034.9 million in FY 1987. The funding in FY 1986 includes \$413.0 million for peacetime requirements and \$256.3 million for war reserves. The peacetime replenishment spares support the Army's flying hour program, depot and pipeline requirements for the life of the system. War reserve spares provide initial combat surge support until resupply can be established. The replenishment spares (peacetime) requirement supports the following systems:

	<u>FY 86</u>
JH-1 Helicopter	97.9
AH-1 (COBRA)	86.3
UH-60 (BLACK HAWK)	111.7
CH-47 (CHINOOK)	17.0
CH-54	5.8
OH-58/OH-6	13.4
OV-10/RV-1	7.4
U-8/U-21	1.7
Communications & Electronics	
ACSE & MISC	<u>71.8</u>
Total	413.0

1-20 February 1985

Department of the Army		Appropriation		FY 1986	
Annual Budget Estimates		Aircraft Procurement, Army			
JUSTIFICATION					
Program or Budget Project Account		(Thousands of Dollars)		Budget	
Budget Program - Activity 4, Support Equipment and Facilities		Actual	Estimate	Estimate	Estimate
		FY 1984	FY 1985	FY 1986	FY 1987
Direct Obligation or Direct Budget Plan		166,155	317,800	312,200	233,800
Direct Obligation					

Section 1 - PURPOSE AND SCOPE

Provides for avionics support equipment including communications, position/navigation, survivability equipment and aviator night vision goggles; for common ground equipment including tool sets, shop sets and components thereof, ground handling/servicing equipment, special test and diagnostic equipment, fixed base airfield support equipment (air traffic control), and aviation life support equipment (ALSE); for tactical air traffic control systems; for flight simulators and training devices; for industrial facilities including provisions for industrial facilities and depot maintenance plant equipment; and for war consumables including lightweight rocket launchers.

Section 2 - JUSTIFICATION OF FUNDS REQUESTED

(\$ in Thousands)	
FY 1986	FY 1987
\$67,600	\$63,800

Avionics Support Equipment - (P-1 Line Item 33).

In 1986, \$67.6 million is requested as follows: \$24.6 million for communications equipment, \$16.1 million for navigation equipment, \$0.5 million for survivability equipment and \$26.6 million for aviation night vision goggles. The FY 1987 request for \$83.6 million is allocated as follows: \$41.0 million for communications equipment, \$15.3 million for navigation equipment, \$0.7 million for survivability equipment and \$26.8 million for aviation night vision goggles.

1-21 February 1985

(\$ in Thousands)
 FY 1986 FY 1987
\$35,000 \$63,200

Common Ground Equipment - (P-1 Line Item 34).

A total of \$35.0 million is requested in FY 1986 and \$63.2 million in FY 1987 for procurement of Sets, Kits, and Outfits; Aviation Ground Support Equipment; Aviation Life Support Equipment and individual items costing less than \$0.9 million. Sets, Kits, and Outfits are required to fill shortages, replace obsolete equipment and to continue implementation of the three level maintenance concept. Aviation Ground Support Equipment provides for the acquisition of aircraft ground power units, vibrex analyzers and other items costing less than \$0.9 million. Airfield support equipment is required to maintain the fixed base air traffic control capability at Army airfields/heliports by replacing aging or obsolete equipment.

(\$ in Thousands)
 FY 1986 FY 1987
\$9,400 \$7,300

Air Traffic Control - (P-1 Line Item 35).

The \$9.4 million requested in FY 1986 and \$7.3 million in FY 1987 is to continue the procurement of tactical air traffic control (ATC) systems to fill critical shortages of equipment in both active and National Guard units. The FY 1986 request is allocated as follows: \$5.4 million for tactical ATC towers, \$1.4 million for Instrument (weather conditions) landing control systems, \$1.0 million for approach radars, \$0.9 million for nap-of-the-earth communications and \$0.7 million for tactical navigation beacons. The FY 1987 request is for the following: \$1.1 million for approach radars, \$2.2 million for nap-of-the-earth communications, \$2.0 million for tactical navigation beacons and \$2.0 million for night vision goggles tactical airfield lighting sets.

(\$ in Thousands)	
FY 1986	FY 1987
\$131,600	\$51,400

Synthetic Flight Simulator Program - (P-1 Line Item 36).

The \$131.6 million requested in FY 1986 is for the procurement of aviation flight simulators. The request includes funds to convert two CH-47C model to D model simulators (\$16.9 million). This conversion concludes a three year program which began in FY 1984. Three UH-60 flight simulators will also be procured (\$43.9 million) in FY 1986 as part of a five year conventional multiyear procurement. Four AH-64 Combat Mission Simulators will also be procured (\$70.8 million) and is a continuation of a conventional multiyear procurement begun in FY 1984.

In FY 1987 \$51.4 million is requested as follows: The third year option of a five year conventional multiyear program will be exercised to purchase three UH-60 simulators (\$40.0 million). \$11.4 million will be used to commence a pre-planned product improvement program to upgrade/modify AH-64 Combat Mission Simulators to aircraft configuration.

(\$ in Thousands)	
FY 1986	FY 1987
\$61,900	\$21,300

Industrial Facilities - (P-1 Line Item 37).

The \$61.9 million requested in FY 1986 is for support of the Army Aviation Program Industrial Facilities. It includes \$10.5 million for rehabilitation and provision of industrial equipment, and \$51.4 million for depot maintenance plant equipment (DWPE). The \$21.3 million requested in FY 1987 for support of Army Aviation Program Industrial Facilities includes \$7.7 million for rehabilitation and provision of industrial equipment, and \$13.6 million for depot maintenance plant equipment (DWPE).

(\$ in Thousands)	
FY 1986	FY 1987
\$6,500	\$6,800

War Consumables - (P-1 Line Item 39).

A total of \$6.5 million requested in FY 1986 and \$6.8 million in FY 1987 is for 7 tube and 19 tube Hydra 70 (2.75 inch) Lightweight Rocket launchers to be used on the AH-1 COBRA/TOW and AH-64 attack helicopters. These launchers are required in order to fire the new family of Hydra 70 rockets with remote set fuzing options.

AIRCRAFT PROCUREMENT, ARMY

Section 3

Comparison of Program Requirements and Financing

Comparison of FY 1985 program requirements as reflected in FY 1985 budget with FY 1985 program requirements as shown in FY 1986 budget.

Comparison in FY 1985 financing as reflected in FY 1985 budget with FY 1985 financing as shown in FY 1986 budget.

Comparison of FY 1984 program requirements as reflected in FY 1985 budget with FY 1984 program requirements as shown in FY 1986 budget.

Comparison of FY 1984 financing as reflected in FY 1985 budget with FY 1984 financing as shown in FY 1986 budget.

1-25 February 1985

COMPARISON OF FY 1985 PROGRAM REQUIREMENTS
AS REFLECTED IN FY 1985 BUDGET WITH
FY 1985 PROGRAM REQUIREMENTS AS SHOWN IN FY 1986 BUDGET
SUMMARY OF REQUIREMENTS (In Thousands of Dollars)

Appropriation Aircraft Procurement, Army	Total Program Requirements		Program Requirements		Increase (+) or Decrease (-)
	Per FY 1985 Budget		Per FY 1986 Budget		
Activity 1 - Aircraft	2,184,600		2,039,000		-145,600
Activity 2 - Modification of Aircraft	846,800		868,000		+ 21,200
Activity 3 - Spares and Repair Parts	633,400		675,900		+ 42,500
Activity 4 - Support Equipment and Facilities	343,500		317,800		- 25,700
TOTAL	4,008,300		3,900,700		-107,600

Explanation by Activity

Activity 1 - Aircraft - Net decrease is due to Congressional actions and internal Army adjustments that decreased AH-64 (-\$43,300), UH-60A (-\$44,500), and EH-60A (-\$81,800). These reductions were offset by Congressional increase to C-12 (+\$24,000).

Activity 2 - Modification of Aircraft - Net increase is due to Congressional actions and internal Army adjustments that decreased OV-1 (-\$1,500), CH-47 (-\$15,000), J-STARS (-\$17,000), and AHIP (-\$12,900). These reductions were offset by Congressional increase to AH-1S of (+\$32,800) and an Army increase to OH-58 (+\$34,800) for safety modifications.

Activity 3 - Spares and Repair Parts - Net increase due to Congressional actions that increased Spares and Repair Parts (+42,500).

Activity 4 - Support Equipment and Facilities - Net decrease is due to Congressional actions and internal Army adjustments that decreased Synthetic Flight Training Systems (-\$17,200) and Industrial Facilities (-\$20,000). These reductions were offset by Congressional increase to Avionics Support Equipment (+\$11,500).

1-26 February 1985

COMPARISON OF FY 1985 FINANCING AS REFLECTED
IN THE FY 1985 BUDGET WITH FY 1985 FINANCING
AS SHOWN IN FY 1986 BUDGET

Appropriation	(In Thousands of Dollars)		
	Financing Per FY 1985 Budget	Financing Per FY 1986 Budget	Increase (+) or Decrease (-)
Aircraft Procurement, Army			
Program Requirements, (Total)			
Program Requirements (Service Account)	4,104,200	4,010,500	- 93,700
Program Requirements (Reimbursable)	(4,008,300)	(3,900,700)	(-107,600)
Less:	(95,900)	(109,800)	(+ 13,900)
Anticipated reimbursements	-95,900	-109,800	- 13,900
Reprogramming from prior year budget plans			
Unobligated balance available from prior year to finance new budget plans			
Unobligated balance transferred to other accounts			
Add:			
Unobligated balance transferred to other accounts			
Unobligated balance available to finance subsequent year budget plans			
BUDGET AUTHORITY	4,008,300	3,900,700	-107,600
Appropriation			
Transfers to other accounts (-)	4,008,300	3,940,900	-67,400
Appropriation (Adjusted)	4,008,300	-40,200	-40,200
		3,900,700	-107,600

EXPLANATION OF CHANGES IN FINANCING

Net decrease to budget authority is due to Congressional actions taken on the FY 1984 Budget Request and transfers to Military Personnel Army.

1-27 February 1985

COMPARISON OF FY 1984 PROGRAM REQUIREMENTS
AS REFLECTED IN FY 1985 BUDGET WITH
FY 1984 PROGRAM REQUIREMENTS AS SHOWN IN FY 1986 BUDGET
SUMMARY OF REQUIREMENTS (In Thousands of Dollars)

Appropriation Aircraft Procurement, Army	Total Program		Increase (+) or Decrease (-)	
	Requirements Per FY 85 Budget	Program Requirements Per FY 1986 Budget		
Activity 1 - Aircraft	1,813,700	1,804,481	-	9,219
Activity 2 - Modification of Aircraft	666,530	669,646	+	3,116
Activity 3 - Spares and Repair Parts	593,600	596,850	+	3,250
Activity 4 - Support Equipment and Facilities	199,418	166,155	-	33,263
TOTAL	3,273,248	3,237,132	-	36,116

Explanation by Activity

Activity 1 - Aircraft - Net decrease is due to decrease to UH-60 (-\$14,219), offset by increase to JSTAR (+\$5,000).

Activity 2 - Modification of Aircraft - Net increase due to the following increases: U-21 (+\$600), EH-1 (+\$200), UH-60 (+\$1,859), AHIF (+\$9,999), Airborne Avionics (+\$497), OH-58 (+\$9,900), Mods Under \$900,000 (+\$4,291); offset by the following decreases: RC-12 (-\$180), AH-1 (-\$19,000), C-12 (-\$50), JSTARS (-\$5,000).

Activity 3 - Spares and Repair Parts - Net increase is due to increase in replenishment and initial provisioning spares (+\$3,250).

Activity 4 - Support Equipment and Facilities - Net decrease is due to decreases to Avionics Support Equipment (-\$24,931), Common Ground Equipment (-\$6,241) and Industrial Facilities (-\$2,191); offset by an increase in the Manufacturing Technology Program (+\$100).

1-28 February 1985

COMPARISON OF FY 1984 FINANCING AS REFLECTED
IN THE FY 1985 BUDGET WITH FY 1984 FINANCING
AS SHOWN IN FY 1986 BUDGET

	(In Thousands of Dollars)	
	Financing Per FY 1985 Budget	Financing Per FY 1986 Budget
Appropriation		
Aircraft Procurement, Army		
Program Requirements, (Total)	3,357,048	3,318,166
Program Requirements (Service Account)	(3,273,248)	(3,237,132)
Program Requirements (Reimbursable)	(83,800)	(81,034)
Less:		
Anticipated Reimbursements	-83,800	-81,034
Reprogramming from prior year budget plans		- 600
Unobligated balance available from prior year to finance new budget plans		
Unobligated balance transferred to other accounts		
Add:		
Unobligated balance transferred to other accounts		
Unobligated balance lapsing		
Unobligated balance available to finance subsequent year budget plans		
BUDGET AUTHORITY	3,273,248	3,236,532
		-36,716
BUDGET AUTHORITY		
Appropriation	3,214,048	3,214,048
Transferred from other accounts	59,200	22,484
Appropriation (adjusted)	3,273,248	3,236,532
		-36,716

EXPLANATION OF CHANGES IN FINANCING

Net decrease to budget authority is due to smaller net increase to the APA appropriation than anticipated as a result of a reprogramming action to increase support for Aircraft GMM.

1-29 February 1985

AIRCRAFT PROCUREMENT, ARMY

Section 4

Status of Aircraft Modification Programs

1-30 February 1985

Status of Aircraft Modification Program

FY 1983 Modification Programs

Programs as of 31 October 1985 (\$ Million)

<u>Program</u>	<u>Appropriated</u>	<u>Reprogramming</u>	<u>Total Program Value</u>	<u>Total Obligations</u>	<u>Total Disbursements</u>
Airplane, Surveillance, OV-1	16.9	- 2.8	14.1	12.8	5.9
Airplane, Reconnaissance, RC-12D	8.7	+ 8.3	17.0	15.1	8.2
Airplane, Reconnaissance, RV-1	9.9	- 9.4	.5	.1	.1
Helicopter, Attack, AH-1S	29.5	- 7.0	22.5	16.4	5.3
Helicopter, Cargo, CH-47	261.3	+ 2.5	263.8	243.7	96.2
Airplane, Cargo, C-12	.4	- .2	.2	.2	.1
Helicopter, Electronic, EH-1	-	+ 2.0	2.0	2.0	1.1
Helicopter, Observation, OH-58	1.8	+ 1.9	3.7	-	-
Army Helicopter Improvement Program (AHIP)	28.7	- .3	28.4	28.2	19.5
Airborne Avionics	5.0	- 3.7	1.3	1.3	.1
Aircraft 9WW	21.2	+20.0	41.2	40.0	22.1
Modifications under \$900,000	.1	+ 3.8	3.9	2.3	1.2
UH-60A Mods	-	+ 2.0	2.0	1.9	1.9

1-31 February 1985

Status of Aircraft Modification Program

FY 1984 Modification Programs

Programs as of 31 October 1985 (\$ Million)

<u>Program</u>	<u>Appropriated</u>	<u>Reprogramming</u>	<u>Total Program Value</u>	<u>Total Obligations</u>	<u>Total Disbursements</u>
Airplane, Surveillance, OV-1	26.4	- 5.5	20.9	13.9	.3
Airplane, Reconnaissance, RC-12D	7.4	- 2.0	5.4	1.4	.1
Airplane, Reconnaissance, RV-1	4.0	- 3.9	.1	-	-
Helicopter, Attack, AH-1S	59.2	-	59.2	59.2	2.3
Helicopter, Cargo, CH-47	330.3	-	330.3	290.1	73.4
Airplane, Cargo, C-12	.2	- .1	.1	.1	-
Helicopter, Electronic, EH-1	.4	+ .2	.6	.5	.2
Helicopter, Observation, OH-58	2.6	+ 9.9	12.5	8.3	-
Army Helicopter Improvement Program (AHIP)	175.4	+10.0	185.4	174.4	.2
Airborne Avionics	3.7	- .8	2.9	2.5	-
Aircraft 9 AW	5.0	+40.2	45.2	35.3	-
Modifications under \$900,000	.2	+ 4.3	4.5	2.9	-
UH-60A Mods	-	+ 1.9	1.9	-	-
Airplane, Utility, U-21	-	+ .6	.6	-	-

1-32 February 1985

Status of Aircraft Modification Program

FY 1985 Modification Programs

Programs as of 31 October 1985 (\$ Million)

Program	Appropriated	Reprogramming	Total Program Value	Total Obligations	Total Disbursements
Airplane, Surveillance, OV-1	20.3	-	20.3	-	-
Airplane, Reconnaissance, RC-12D	7.8	-	7.8	-	-
Airplane, Reconnaissance, RV-1	6.5	-	6.5	-	-
Helicopter, Attack, AH-1S	90.0	-	90.0	-	-
AH-1 Training Device (HITMORE)	3.0	-	3.0	-	-
Helicopter, Cargo, CH-47	431.9	-	431.9	-	-
Helicopter, Electronic, EH-1	2.2	-	2.2	-	-
Helicopter, Observation, OH-58	4.0	-	4.0	-	-
Helicopter, Utility, UH-1	1.9	-	1.9	-	-
Army Helicopter Improvement Program (AHIP)	204.4	-	204.4	-	-
Airborne Avionics	7.0	-	7.0	-	-
Aircraft 94W	59.5	-	59.5	-	-
Modifications under \$900,000	.1	-	.1	-	-
UH-60A Mods	5.9	-	5.9	-	-

1-33 February 1985

AIRCRAFT PROCUREMENT, ARMY

Section 5

Modification of Aircraft

1-34 February 1985

CLASSIFICATION

REPORTS CONTROL SYMBOL DD-COMP (AR) 1092	AIRCRAFT MODIFICATION		DATE Feb 1985
APPROPRIATION/BUDGET ACTIVITY Procurement, Army/Activity: 2	MODIFICATION TITLE AND NO. Block Improvement #1-84-01-1002		

AIRCRAFT AFFECTED: OV-1D (AZ3530)

DESCRIPTION/JUSTIFICATION: Type of Improvement - Operational Capability. The entire fleet of OV-1D aircraft has an average of 3500 hours per aircraft, with several aircraft already exceeding 6000 hours. The continued operational requirements for the OV-1D aircraft are rapidly approaching the analytical fatigue life expectancy of 7000 hours, which was projected at lower aircraft gross weights than are being presently utilized (which means that the actual life may be less than 7000 hours). Therefore, in order to continue SLAR/IR/PHOTOGRAPHIC operational missions into the late 1990's or beyond, it has become evident that the OV-1D aircraft fleet requires a Block Improvement/Service Life Extension Program. The planned program will: update the avionics systems that have a marginal logistic date between the calendar years 1983 through 1990 to the latest DOD standards with increased interoperable communications/navigation components, improve the EMI/EMC and tempest profile of the aircraft, and enhance the wing and fuselage carry-through structure to allow continued use of the basic airframe platform.

DEVELOPMENT STATUS: The OV-1D aircraft is a fielded system. Avionics systems are available.

MILESTONES:

Project Initiated 1Q85			
1st Phase Engr Contract Award			
ECP Approval			
Production Contract Award			
Average Production Lead Time			
Deliveries Start			

PROJECT FINANCIAL PLAN: (Amounts in thousands of dollars)

FY84		FY85		FY86		FY87		REMAINING		TOTAL	
QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	RQMT	QTY	COST
	2,612.0		271.0		27,700.0		13,396.0			38	193,424.0

OV-10 BLOCK IMPROVEMENT
PIP #1-84-01-1002

BASIS FOR COST ESTIMATE: (Amounts in thousands of dollars)

	FY84		FY85		FY86		FY87		REMAINING		TOTAL	
	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST
Integ Flt Control Sys		2,612.0										
Non-Recurring Engr												2,612.0
Data/Software						20,761.0						20,761.0
Publications/Provisioning						6,515.6						6,515.6
Test Equipment								5,600.0				5,600.0
Contractor Recurring						80.1						80.1
Long Lead GFE									38	106,920.0	38	106,920.0
Gov't Prod Engr Spt				271.0		343.3		6,379.0		29,299.2		35,678.2
Engr Change Orders								1,417.0		1,182.0		1,796.3
TOTAL		2,712.0		271.0		27,700.0		13,396.0	38	11,676.0	38	13,093.0
										149,445.0		193,424.0

METHOD OF IMPLEMENTATION: Aircraft will be modified at the contractor's facility. Prototype aircraft will be completed in a 24 month period. Production is to commence in FY 88 for the first 10 aircraft with a planned production average of 12-15 months. In addition to the Service Life Extension Program (SLEP), aircraft will include the following system updates:

Secure Communication Radios
Intercom System
Identification Friend or Foe (IFF)
Integrated Flight Control System
Navigation System

Altitude Instrumentation
Controls and Display System
Mil Standard Data Bus
Cockpit Lights
Prop Synchronizer

CLASSIFICATION		AIRCRAFT MODIFICATION		DATE Feb 1985																					
REPORTS CONTROL SYMBOL DD FORM (AM) 1092																									
APPROPRIATION/BUDGET ACTIVITY		MODIFICATION TITLE AND NO.																							
AIRCRAFT PROCUREMENT, ARMY/ACTIVITY: 2		Laser Augmented Airborne IOW (LAAT) 1-82-01-0919																							
AIRCRAFT AFFECTED: AH-1S Cobra/TOW (AA0150)																									
<p><u>DESCRIPTION/JUSTIFICATION:</u> The current AH-1S Cobra configuration requires Cobra crewmembers to rely on range escalation or stadiometric ranging techniques giving an accuracy of +/- 25% of the range. The LAAT will provide precise range data (+/- 10 meters) to the copilot/gunner and to the fire control computer for weapons delivery.</p> <p>The LAAT consists of a basic telescopic sight unit into which a neodymium yag laser rangefinder has been integrated. The LAAT is an integral part of the AH-1S(MC) fire control system. It provides the target range data required to perform a complete ballistics solution by the fire control computer.</p> <p>This PI will fill the existing gap in LAAT coverage for the Modernized Cobra and provide a single consistent configuration.</p> <p><u>DEVELOPMENT STATUS:</u> Development and testing already completed as part of the AH-1G to AH-1S Conversion Program (PIP 1-77-01-0479).</p> <p><u>MILESTONES:</u></p> <table border="1"> <thead> <tr> <th></th> <th>FY 86</th> <th>FY 87</th> </tr> </thead> <tbody> <tr> <td>Production Contract Award</td> <td>2Q86</td> <td>2Q87</td> </tr> <tr> <td>Production Delivery Starts</td> <td>4Q88</td> <td>4Q89</td> </tr> <tr> <td>Kit Application Starts</td> <td>4Q86</td> <td>3Q89</td> </tr> <tr> <td>Kit Application Complete</td> <td>3Q89</td> <td>2Q90</td> </tr> </tbody> </table> <p><u>PROJECTED FINANCIAL PLAN:</u></p> <table border="1"> <thead> <tr> <th></th> <th>FY 86</th> <th>FY 87</th> </tr> </thead> <tbody> <tr> <td></td> <td>11,219.0</td> <td>15,000.0</td> </tr> </tbody> </table>						FY 86	FY 87	Production Contract Award	2Q86	2Q87	Production Delivery Starts	4Q88	4Q89	Kit Application Starts	4Q86	3Q89	Kit Application Complete	3Q89	2Q90		FY 86	FY 87		11,219.0	15,000.0
	FY 86	FY 87																							
Production Contract Award	2Q86	2Q87																							
Production Delivery Starts	4Q88	4Q89																							
Kit Application Starts	4Q86	3Q89																							
Kit Application Complete	3Q89	2Q90																							
	FY 86	FY 87																							
	11,219.0	15,000.0																							

All-1S Laser Augmented Airborne TOW (LAAT)
PIP 1-82-01-0919

Exhibit P-ja
Page 2 of 2

BASIS FOR COST ESTIMATE:

	FY 86		FY 87		FY 88		FY 89		FY 90		TOTAL	
	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT
Recurring Kits	107	11,219.0	143	15,800.0	-	-	-	-	-	-	250	27,019.0
Airframe Kit Application (Constant OMA FY85 \$)	-	-	-	-	15	(3.0)	180	(39.0)	55	(12.0)	250	(54.0)
TOTAL		11,219.0		15,800.0		-		-		-		27,019.0

METHOD OF IMPLEMENTATION: LAAT will be integrated via a contractor and depot modification program to the TOW Missile System telescopic sight unit.

	FY 88		FY 89		FY 90	
	1	2	3	4	1	2
Delivery Schedule	15	45	45	45	45	10
Installation Schedule	8	37	45	45	45	25

CLASSIFICATION

REPORTS CONTROL SYMBOL DD-COMP (AR) 1092	AIRCRAFT MODIFICATION	DATE Feb 1985
APPROPRIATION/BUDGET ACTIVITY AIRCRAFT PROCUREMENT, ARMY/ACTIVITY: 2	MODIFICATION TITLE AND NO. Cobra Fleet Life Extension (C-FLEX) 1-83-01-0957	

AIRCRAFT AFFECTED: AH-1S Cobra/TOW (AM0150)

DESCRIPTION/JUSTIFICATION: The Cobra Fleet Life Extension (C-FLEX) Program, which was approved by the Vice-Chief in March 1983, consists of the following product improvements:

1. Rotor Improvements:

Purpose: To provide an improved design main rotor hub and pitch control linkage for improved reliability and safety.

Description: The main rotor hub features elastomeric pitch change bearing, and the pitch change tube will be a straight metal or composite tube with an elastomeric "lollipop" bearing.

2. Blue/Green Lighting:

Purpose: To provide AH-1S (PROD, ECAS, & MC) cockpit/instrument lighting compatibility with AN/AVS-6 night vision goggles.

Description: Incandescent flood and post lights with BG-7B blue/green glass will be installed with associated switches and controls. The original red lighting system will be retained.

3. TOW Reliability:

Purpose: To satisfy a fleet-wide need for a more reliable TOW missile system.

Description: Improve the reliability of the M65 TOW missile by approximately 15% by incorporation of several system changes to replace the most critical high failure items.

4. TOW Test Set:

Purpose: Improve the reliability of the existing test set guided missile system (TSCMS), which is fragile, subject to misinterpretation, and time consuming to use.

Description: Upgrade existing TSCMS by incorporating an automatic digital controller (WSTS), which is more reliable and easier to use.

5. Radio Upgrade:

Purpose: Replace obsolete communications/navigation equipment, provide commonality within the AH-1S fleet and with other Army aircraft. Reduce logistics support requirements.

Description: Provides the following standard communication/navigation configuration for all AH-1S aircraft; i.e.:

-- UHF - ARC-164
-- VHF - ARC-186
-- FM -- SINGARS
-- ADF - ARN-89
-- Transponder - APX-100

6. ARNG/AH-1G Upgrade:

Purpose: To conduct a factory inspection, repair and modification program which provides the ARNG with FMC attack helicopters easily equipped with airborne TMS.

Description: OCONUS transfer inspection, repair discrepancies, modification of remaining AH-1G to AH-1S airframe.

7. K-FLEX Shaft:

Purpose: To replace the current main drive shaft with a more reliable and maintainable assembly.

Description: The K-FLEX drive shaft consists of flexible, steel couplings. The Kaman shaft directly installs between the engine and transmission.

AH-1S Cobra Fleet Life Extension (C-FLEX)
 PIP 1-83-01-0957

Exhibit P-3a
 Page 3 of 3

MILESTONES: The Cobra FLEX Execution Plan began with the engineering/testing phase during 3Q84. Kit production will commence 2Q85, followed by kit applications identified for 1Q86. With the exception of the product improvement for TOW Reliability and Rotor Improvements, the program is scheduled for completion, with the last kit application occurring 4Q89. TOW Reliability and Rotor Improvements will be implemented on an attrition basis; therefore, application will extend beyond FY 91.

<u>PROJECTED FINANCIAL PLAN:</u>		<u>FY 82</u>	<u>FY 83</u>	<u>FY 84</u>	<u>FY 85</u>	<u>FY 86</u>	<u>FY 87</u>	<u>FY 88</u>
		1,700.0	7,728.0	40,700.0	66,700.0	84,800.0	43,900.0	50,422.0
	<u>FY 89</u>	<u>FY 90</u>	<u>TOTAL</u>					
	2,200.0	600.0	298,750.0					

The following TMDE funding is included in the above financial plan to support Reserve Component Modernization.

<u>FY 86</u>	<u>FY 87</u>	<u>FY 88</u>	<u>FY 89</u>	<u>FY 90</u>	<u>TOTAL</u>
3,300.0	3,400.0	1,600.0	2,200.0	600.0	11,100.0

CLASSIFICATION		AIRCRAFT MODIFICATION		DATE Feb 1985
REPORTS CONTROL SYMBOL DD-COMP (AR) 1092				
APPROPRIATION/BUDGET ACTIVITY AIRCRAFT PROCUREMENT, ARMY/ACTIVITY: 2		MODIFICATION TITLE AND NO. MR Flapping Control Device (Hub Spring) 1-84-01-9958		
AIRCRAFT AFFECTED: AH-1S Cobra/TOW (AA0150)				
<p>DESCRIPTION/JUSTIFICATION: This PIP will provide the AH-1 model helicopters with a device to positively resist the main rotor hub to mast contact during maneuvering flight. The hub spring will not be active during the majority of steady state and maneuvering flight but will begin engagement when the main rotor flapping reaches four degrees. At this point, the hub spring will induce a gradually increasing load between the hub and mast, opposing increase in flapping. The hub/mast load is reacted as a moment by the mast and carried through the transmission to the airframe through the transmission mounts. This moment is expected to increase aircraft control sensitivity to large control inputs and to induce noticeable airframe vibrations in advance of hub/mast contact (mast bumping). Safety will be improved because of the increased controllability and the expected reduced incidence of mast bumping. Dependent on the results of the transmission static test, changes to the transmission case may be required.</p> <p>DEVELOPMENT STATUS: The hub spring has been demonstrated on various aircraft, including the UH-1H. The engineering design and fabrication contract was awarded 21 September 1984, with this effort being completed by the contractor 1 March 1985.</p> <p>Contractor will perform fatigue tests to establish component lives. A flight load survey will be conducted to assure hub spring size is correct and that loads being introduced into the airframes through the transmission are within allowable limits. Flight tests will be conducted to assure a positive feedback to the pilot when flapping angles approach max flapping limitations.</p> <p>Government testing will be conducted to verify contractor testing and to assure satisfactory airworthiness and flight characteristics. Testing is scheduled to begin 1 March 1985, with final tests being completed 1 February 1986.</p>				

AH-1S MR Flapping Control Device
PIP 1-84-01-0958

MILESTONES:

	FY 84	FY 86
Engineering Design & Fabrication Contract Award	Sep 84	
Production Contract Award		2Q86
Production Delivery Starts		4Q86
Kit Application Starts		1Q87
Kit Application Complete		4Q87

PROJECTED FINANCIAL PLAN:

	FY 84	FY 85	FY 86
	5,100.0	-0-	5,400.0

BASIS FOR COST ESTIMATE:

	FY 84	FY 85	FY 86	FY 87
	QTY	AMT	QTY	AMT
Nonrecurring Design & Fabrication	-	5,100.0	-	-
Publications (OMA)	-	-	-	-
Recurring-Retrofit Kits	-	-	1102	(50.0)
Retr 'it Kit Installation (OMA)	-	-	-	5,400.0
			1102	(2,575.0)
TOTAL		5,100.0		5,400.0

METHOD OF IMPLEMENTATION: Retrofit kits, consisting of hub spring components, will be procured from Bell Helicopter Textron, Inc., (BHTI). This retrofit kit will be installed at OLR site. Time to install kit is 54 manhours per kit with one kit per aircraft.

	FY 86	FY 87
	1	2
Delivery Schedule	102	300
Installation Schedule	125	300

NOTE: These costs/schedules do not include transmission changes. This is the hub spring only.

CLASSIFICATION		AIRCRAFT MODIFICATION		DATE Feb 1985																																																												
REPORTS CONTROL SYMBOL DD COMP (AR) 1092																																																																
APPROPRIATION/BUDGET ACTIVITY AIRCRAFT PROCUREMENT, ARMY/ACTIVITY: 2		MODIFICATION TITLE AND NO. C-NITE 1-84-01-0990																																																														
AIRCRAFT AFFECTED: AH-1S Cobra/TOW (AA0150)																																																																
<p><u>DESCRIPTION/JUSTIFICATION:</u> The current AH-1S Cobra configuration has a limited operational capability during night and reduced visibility conditions. Installing the C-NITE system on the Cobra will provide a thermal night sight and TOW II guidance electronics. The C-NITE program modifies existing M-1 tank FLIR and BFV TOW II guidance to provide a low cost system to give the Cobra fleet a substantially enhanced capability of detecting, acquiring, and engaging targets during periods of reduced visibility and at night.</p> <p><u>DEVELOPMENT STATUS:</u> C-NITE components will be adapted from "off-the-shelf" hardware. This program combines the Cobra M65 TOW system with the M-1 tank FLIR and the Bradley Fighting Vehicle VTT. Integration of these components will be done by Hughes Aircraft Company. Qualification will include contractor and Army flight tests at the contractor and Yuma Proving Ground facilities. User testing will consist of a force development test and experimentation (FDTE). Three prototype systems will be tested using two helicopters.</p>																																																																
<p><u>MILESTONES:</u></p> <table border="0"> <tr> <td></td> <td>FY 84</td> <td>FY 85</td> <td>FY 86</td> <td>FY 87</td> <td>FY 88</td> </tr> <tr> <td>Pre-Production Contract</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Initial Prod Facility Contr Award</td> <td>Dec 84</td> <td>2Q85</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Production Contract Award</td> <td></td> <td></td> <td>3Q86</td> <td>3Q87</td> <td>3Q88</td> </tr> <tr> <td>Production Delivery Starts</td> <td></td> <td></td> <td>1Q87</td> <td>1Q88</td> <td>1Q89</td> </tr> <tr> <td>Kit Application Starts</td> <td></td> <td></td> <td>2Q87</td> <td>2Q88</td> <td>1Q90</td> </tr> <tr> <td>Kit Application Complete</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><u>PROJECTED FINANCIAL PLAN:</u></td> <td>FY 84</td> <td>FY 85</td> <td>FY 86</td> <td>FY 87</td> <td>FY 88</td> </tr> <tr> <td></td> <td>19,000.0</td> <td>12,000.0</td> <td>21,700.0</td> <td>48,600.0</td> <td>33,200.0</td> </tr> <tr> <td></td> <td>(RDT&E)</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>						FY 84	FY 85	FY 86	FY 87	FY 88	Pre-Production Contract						Initial Prod Facility Contr Award	Dec 84	2Q85				Production Contract Award			3Q86	3Q87	3Q88	Production Delivery Starts			1Q87	1Q88	1Q89	Kit Application Starts			2Q87	2Q88	1Q90	Kit Application Complete						<u>PROJECTED FINANCIAL PLAN:</u>	FY 84	FY 85	FY 86	FY 87	FY 88		19,000.0	12,000.0	21,700.0	48,600.0	33,200.0		(RDT&E)				
	FY 84	FY 85	FY 86	FY 87	FY 88																																																											
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	(RDT&E)																																																															

AM-1S C-NITE
PIP 1-84-01-0990

BASIS FOR COST ESTIMATE:

	FY 84		FY 85		FY 86		FY 87		FY 88		FY 89/90	
	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT
Pre-Production	-	19,000.0 (RDT&E)	-	-	-	-	-	-	-	-	-	-
Tooling	-	-	-	12,000.0	-	-	-	-	-	-	-	-
Publication & Training	-	-	-	(143.0)	-	-	-	-	-	-	-	-
Recurring Kits	-	-	-	-	107	21,700.0	240	48,600.0	153	33,196.0	-	-
Airframe Kit Application (Constant FY 85 \$)	-	-	-	-	-	-	16	(180.0)	200	(2,250.0)	284	(3,195.0)
TOTAL		19,000.0		12,000.0		21,700.0		48,600.0		33,196.0		

NOTE: The following OMA funds were approved for C-NITE for the overhaul effort to be accomplished in conjunction with the TOW Sight Unit (TSU) modification:

(Estimated \$ Millions)	FY 85	FY 86	FY 87	TOTAL
	1.6	6.4	5.0	13.0

	FY 87	FY 88	FY 89	FY 90
	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4

Delivery Schedule	1	4	18	44	60	60	60	60	13	
Installation Schedule	2	6	8	20	60	60	60	60	60	44

Additional funding, not shown here, is available in FY 88 (\$35.3M), FY 89 (\$42.0M) and FY 90 (\$5.0M) to support follow-on buy for additional C-NITE systems (approved 5 July 1984 by the Vice-Chief of Staff of the Army), plans/schedules for which are not yet developed.

CLASSIFICATION		AIRCRAFT MODIFICATION		DATE																																																						
REPORTS CONTROL SYMBOL DD-COMP (AR) 1092				Feb 1985																																																						
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Army 2 Modification of Aircraft		MODIFICATION TITLE AND NO. Conversion of T55-L-11D to T55-L-712 1-78-01-0700																																																								
AIRCRAFT AFFECTED: CH-47C (AA0250)																																																										
<p>DESCRIPTION/JUSTIFICATION: Type of Improvement - Reliability and Maintainability. This PIP provides hardware for a long life (RAM-D) engine. It also provides hardware for emergency power conditions. This hardware will make up an engine identified as the T55-L-712. Improved RAM-D hardware is necessary in order to increase the Mean-Time-Between-Depot for all causes (MTBDA) for the T55-L-11D engine to over 1000 hours. Emergency power hardware is necessary in order to provide reduced aircraft vulnerability in the event of an engine being disabled. A T55-L-11D engine with RAM-D and emergency power hardware installed will be reidentified as the T55-L-712.</p> <p>DEVELOPMENT STATUS: Program initiated 1 Mar 76. Test engines have been converted to the T55-L-712 configuration and testing has been completed determining low-cycle fatigue, extended service life and performance. This testing was accomplished under the Component Improvement Program.</p> <p>MILESTONE:</p> <table border="0"> <thead> <tr> <th></th> <th>FY 81 & PRIOR ACT DATE</th> <th>FY 82 ACT DATE</th> <th>FY 83 ACT DATE</th> <th>FY 84 ACT DATE</th> <th>FY 85 EST DATE</th> </tr> </thead> <tbody> <tr> <td>Contract Award for Tooling</td> <td>Aug 76</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Long Lead Time Casting</td> <td>Aug 79</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Engine Production Kits</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Lead Time-23 Months</td> <td></td> <td>Feb 82</td> <td>Jun 84</td> <td>Jun 84</td> <td>2Q 85</td> </tr> <tr> <td>Eng Kit Delivery Starts</td> <td>Mar 81</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Eng Kit Inst Starts</td> <td>May 81</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Contract Award for Airframe-Kits</td> <td>Sep 79</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Lead Time-18 Months</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>						FY 81 & PRIOR ACT DATE	FY 82 ACT DATE	FY 83 ACT DATE	FY 84 ACT DATE	FY 85 EST DATE	Contract Award for Tooling	Aug 76					Long Lead Time Casting	Aug 79					Engine Production Kits						Lead Time-23 Months		Feb 82	Jun 84	Jun 84	2Q 85	Eng Kit Delivery Starts	Mar 81					Eng Kit Inst Starts	May 81					Contract Award for Airframe-Kits	Sep 79					Lead Time-18 Months					
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CH-47 Conversion of T55-L-110 to T55-L-712
PIP #1-78-01-0700

Exhibit P-3a
Page 2 of 3

BASIS FOR COST ESTIMATE: (Amount in millions of dollars)

	FY 81 & Prior		FY 82		FY 83		FY 84		FY 85		FY 86		TOTAL	
	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost
Engine Kits	151	28.915	96	17.379	44	9.300	88	18.100	139	25.576			518	99.270
Airframe Kits	215	1.275											215	1.275
Nonrecur APA		1.864		.010										1.874
Installation (OWA)					(145)	(.394)	(29)	(.163)	(8)	(.024)	(11)	(.035)	(193)	(.616)
TOTALS	366	32.054	96	17.389	44	9.300	88	18.100	139	25.576			733	102.419

1-47 February 1985

CH-47 Conversion of T55-L-11D to T55-L-712
PIP #1-78-01-0700

Exhibit P-3a
Page 3 of 3

METHOD OF IMPLEMENTATION: Implementation of Airframe Kits by contractor and depot. Engine conversion accomplished by depot during overhaul.

	<u>FY 82 & PRIOR</u>				<u>FY 83</u>				<u>FY 84</u>				<u>FY 85</u>			
					<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
(23 Mos. Lead Time) Engine Kit Delivery Schedule	7				15	15	15	15	15	24	24	19	15	15	15	8
Installation Schedule	2				5	7	9		21	21	21	21	11	11	11	12
					<u>FY 86</u>				<u>FY 87</u>				<u>FY 88</u>			
					<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
Engine Kit Delivery	11	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Installation/Completion	10	10	10	10	24	24	24	24	24	24	24	24	24	24	24	24
					<u>FY 81</u>				<u>FY 82</u>				<u>FY 83</u>			
					<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
Airframe Kit Delivery	18	19	19	19	27	27	27	27	27	27	27	27	27	27	27	27
Schedule																
Installation Schedule					17	15										
Induction/Completion					36	36	36	37	7	7	7	8	8	5	6	
					<u>FY 84</u>				<u>FY 85</u>				<u>FY 86</u>			
					<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
					<u>TOTAL</u>				<u>TOTAL</u>				<u>TOTAL</u>			

*Year end density considering CH-47D Modernization Program inductions, 182 aircraft, and incorporation of 11 aircraft procured from Agusta in tn conversion program.

CLASSIFICATION		MULTIYEAR PROCUREMENT		DATE
REPORTS CONTROL SYMBOL DD-COMP (AR) 1092	AIRCRAFT MODIFICATION			
APPROPRIATION/BUDGET ACTIVITY Procurement, Army/Activity: 2, Modification of Aircraft		AIRCRAFT MODIFICATION TITLE AND NO. CH-47 Modernization, PIP #1-80-01-0815		
AIRCRAFT AFFECTED: CH-47D. (SSN: AA0250)				
DESCRIPTION/JUSTIFICATION: Type of Improvement - Improved Operational Capability. Provides for incorporation of advances in design technology since introduction of CH-47s into Army inventory. Integration of these changes will result in improved reliability, maintainability, and reduced vulnerability. Based upon the 20-year life expectancy of the CH-47D modernized aircraft, the year designer of each current serial number will be changed to year of acceptance. The CH-47 (Chinook) medium lift helicopter was developed in the late 50s with the first CH-47s being procured in 1962. The Chinook provided invaluable battlefield mobility in Vietnam for tactical vehicles, artillery and engineer equipment, personnel and logistical support equipment. The Chinook will continue in service to meet the Army medium lift requirement through the year 2000. The CH-47A and B models fail to meet the Required Operational Capability (ROC) of 15,000 lb. payload for medium lift helicopters.				
DEVELOPMENT STATUS: (RDYE Funded)				
Modernization Development Contract				
1st Flight				Jun 76
Preliminary Airworthiness Evaluation (PAE)				May 79
DT/OT II Start				Dec 79
DT/OT II Complete				Dec 79
ASARC III				May 80
DSARC III Decision				Aug 80
				Oct 80

CH-47D MODERNIZATION
PIP #1-80-01-0815

Exhibit P-3a
Page 2 of 4

MILESTONES:

Long Lead Time Items
Production Contract Award
Induction Starts
Delivery Complete

<u>FY 80</u>	<u>FY 81</u>	<u>FY 82</u>	<u>FY 83</u>	<u>FY 84</u>	<u>FY 85</u>	<u>FY 86</u>	<u>FY 87</u>
Apr 80	Oct 80 Oct 80 Oct 80 May 83	Dec 81 Dec 81 Dec 81 Feb 84	Sep 83 Sep 83 Dec 82 Dec 84	Mar 84 Mar 84 Dec 83 IQ FY 86	2Q FY 85 2Q FY 85 Dec 84 IQ FY 87	IQ FY 86 IQ FY 86 IQ FY 86 IQ FY 88	IQ FY 87 IQ FY 87 IQ FY 87 IQ FY 89
<u>FY 88</u>	<u>FY 89</u>	<u>FY 90</u>	<u>FY 91</u>	<u>FY 92</u>			

Long Lead Time Items
Production Contract Award
Induction Starts
Delivery Complete

IQ FY 88 IQ FY 88 IQ FY 88 IQ FY 90	IQ FY 89 IQ FY 89 IQ FY 89 IQ FY 91	IQ FY 90 IQ FY 90 IQ FY 90 IQ FY 92	IQ FY 91 IQ FY 91 IQ FY 91 IQ FY 93	IQ FY 91 IQ FY 91 IQ FY 91 IQ FY 93			
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PROJECT FINANCIAL PLAN: (Amounts in millions of dollars)

<u>FY 80</u>	<u>FY 81</u>	<u>FY 82</u>	<u>FY 83</u>	<u>FY 84</u>	<u>FY 85</u>	<u>FY 86</u>
<u>Qty</u>	<u>Qty</u>	<u>Qty</u>	<u>Qty</u>	<u>Qty</u>	<u>Qty</u>	<u>Qty</u>
27.279	9 151.017	19 210.094	24 237.843	36 310.936	48 401.865	48 361.800
<u>Cost</u>	<u>Cost</u>	<u>Cost</u>	<u>Cost</u>	<u>Cost</u>	<u>Cost</u>	<u>Cost</u>
<u>FY 87</u>	<u>FY 88</u>	<u>FY 89</u>	<u>FY 90</u>	<u>FY 91</u>	<u>FY 92</u>	<u>TOTAL</u>
<u>Qty</u>	<u>Qty</u>	<u>Qty</u>	<u>Qty</u>	<u>Qty</u>	<u>Qty</u>	<u>Qty</u>
48 305.473	48 267.400	48 259.600	48 257.515	48 209.431	12 60.409	436 3,060.662

Exhibit P-3a
Page 3 of 4

[illegible]

1/ Does not include GFM long lead time items. The long lead items procured each year are to support the succeeding 2 years of modernization contracts.

CH-47D MODERNIZATION
PIP #1-80-01-0815

Exhibit P-3a
Page 4 of 4

METHOD OF IMPLEMENTATION: CH-47A, B, and C model aircraft will be inducted from the field to the contractor's site for modernization

	FY 81	FY 82	FY 83	FY 84	FY 85	FY 86	FY 87
	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
Inductions	1 2 3 3	3 4 6 6	6 6 6 6	7 9 9 11	12 12 12 12	12 12 12 12	12 12 12 12
Deliveries		1 1	3 3 4 6	6 6 6 6	9 9 12 12	12 12 12 12	12 12 12 12
	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93	TOTAL
	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	
Inductions	12 12 12 12	12 12 12 12	12 12 12 12	12 12 12 12	12 12 12 12		436
Deliveries	12 12 12 12	12 12 12 12	12 12 12 12	12 12 12 12	12 12 12 12	12 4	436

NVG Compatible Cockpit
PIP #1-81-01-0852

BASIS FOR COST ESTIMATE: (Amounts in millions of dollars)

	FY 82	FY 83	FY 84	FY 85	FY 86	FY 87
	Qty	Amt	Qty	Amt	Qty	Amt
Nonrecurring		.596	.441	.	.108	.12
Mod Kit	48	.078	.076		48	1.52
Production Incorporation	24	1.244	.524	48	1.365	1.64
TOTAL		1.918	1.041	1.473	1.561	
						TOTAL
	Qty	Amt	Qty	Amt	Qty	Amt
Nonrecurring		.128	.134	.183		1.41
Mod Kit	48	1.606	1.684	1.850	432	1.08
Production Incorporation	48	1.734	1.818	2.033	432.	14.38
TOTAL						16.87

METHOD OF IMPLEMENTATION: Modification kit is incorporated at time of modernization.

METHOD OF IMPLEMENTATION		FY 83	FY 84	FY 85	FY 86	FY 87	FY 88
		1	4	1	4	1	4
		2	3	2	3	3	3
		3	1	3	1	4	1
		4	2	4	2	3	4
		5	3	5	3	4	5
		6	4	6	4	5	6
		7	5	7	5	6	7
		8	6	8	6	7	8
		9	7	9	7	8	9
		10	8	10	8	9	10
		11	9	11	9	10	11
		12	10	12	10	11	12
		13	11	13	11	12	13
		14	12	14	12	13	14
		15	13	15	13	14	15
		16	14	16	14	15	16
		17	15	17	15	16	17
		18	16	18	16	17	18
		19	17	19	17	18	19
		20	18	20	18	19	20
		21	19	21	19	20	21
		22	20	22	20	21	22
		23	21	23	21	22	23
		24	22	24	22	23	24
		25	23	25	23	24	25
		26	24	26	24	25	26
		27	25	27	25	26	27
		28	26	28	26	27	28
		29	27	29	27	28	29
		30	28	30	28	29	30
		31	29	31	29	30	31
		32	30	32	30	31	32
		33	31	33	31	32	33
		34	32	34	32	33	34
		35	33	35	33	34	35
		36	34	36	34	35	36
		37	35	37	35	36	37
		38	36	38	36	37	38
		39	37	39	37	38	39
		40	38	40	38	39	40
		41	39	41	39	40	41
		42	40	42	40	41	42
		43	41	43	41	42	43
		44	42	44	42	43	44
		45	43	45	43	44	45
		46	44	46	44	45	46
		47	45	47	45	46	47
		48	46	48	46	47	48
		49	47	49	47	48	49
		50	48	50	48	49	50
		51	49	51	49	50	51
		52	50	52	50	51	52
		53	51	53	51	52	53
		54	52	54	52	53	54
		55	53	55	53	54	55
		56	54	56	54	55	56
		57	55	57	55	56	57
		58	56	58	56	57	58
		59	57	59	57	58	59
		60	58	60	58	59	60
		61	59	61	59	60	61
		62	60	62	60	61	62
		63	61	63	61	62	63
		64	62	64	62	63	64
		65	63	65	63	64	65
		66	64	66	64	65	66
		67	65	67	65	66	67
		68	66	68	66	67	68
		69	67	69	67	68	69
		70	68	70	68	69	70
		71	69	71	69	70	71
		72	70	72	70	71	72
		73	71	73	71	72	73
		74	72	74	72	73	74
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CLASSIFICATION

REPORTS CONTROL SYMBOL DD-COMP (AR) 1002	AIRCRAFT MODIFICATION		DATE
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APPROPRIATION/BUDGET ACTIVITY	Aircraft	MODIFICATION TITLE AND NO.
Procurement, Army/Activity:	2, Modification of Aircraft	Improved Deployment Capability, PIP #1-81-01-0851

AIRCRAFT AFFECTED: CH-47C/D (SSN: AA0250)

DESCRIPTION/JUSTIFICATION: Type of Improvement - Improved Operational Capability. Provides the CH-47C and D fleet the ability to rapidly self-deploy worldwide. This provides the ability to reinforce USAREUR assets in time of conflict and to support rapid deployment operations. The self-deployment kit will include extended range fuel system, aviation life support equipment, performance calculator, and personnel rescue hoist.

DEVELOPMENT STATUS: This capability was demonstrated in August 1979 in Operational Northern Leap when four CH-47C helicopters self-deployed from Ft. Carson, Colorado, to Heidelberg, Germany.

MILESTONES:

	FY 86	FY 87
Engineering Initiated	1Q 86	
Contract Award, Kits	2Q 86	1Q 87
Kit Delivery Starts	2Q 87	1Q 88

PROJECT FINANCIAL PLAN: (Amounts in Millions of Dollars)

	FY 86		FY 87		TOTAL	
	QTY	COST	QTY	COST	QTY	COST
30	7.746	68	10.996	93	18.742	

BASIS FOR COST ESTIMATE: (Amounts in Millions of Dollars)

	FY 86		FY 87		TOTAL	
	QTY	COST	QTY	COST	QTY	COST
Nonrecurring Eng Deployment Kits	30	2.297	68	10.996	98	16.445
TOTAL		7.746		10.996		18.742

IMPROVED DEPLOYMENT CAPABILITY
PIP #1-81-01-0851

Exhibit P-3a
Page 2 of 2

METHOD OF IMPLEMENTATION: Self-deployment kits will be prepositioned with rapid deployment units and installed into/removed from the aircraft by the user as required.

	FY 87				FY 88				
	1	2	3	4	1	2	3	4	<u>TOTAL</u>
Deployment Kit									
Deliveries	10	10	10	10	17	17	17	17	98

CLASSIFICATION

REPORTS CONTROL SYMBOL DD-COMP (AIR) 1002	AIRCRAFT MODIFICATION		DATE Feb 1985
APPROPRIATION/BUDGET ACTIVITY Procurement, Army/Activity: 2, Modification of Aircraft	Aircraft	MODIFICATION TITLE AND NO. Helicopter Internal Cargo Handling System (HICHS) PIP #1-83-01-0854	

AIRCRAFT AFFECTED: CH-47C/D (SSN: AA0250)

DESCRIPTION/JUSTIFICATION: Type of Improvement - Improved operational capability. The incorporation of the HICHS will allow full advantage of the CH-47C/D's versatility and increase its internal cargo productivity by a factor of two. The system will allow the rapid load/unload and restraint of standard pallets, Air Force pallets, breakbulk cargo and special nuclear loads.

DEVELOPMENT STATUS: Development was accomplished as part of an Army special project. Qualification and testing will be completed by the third quarter FY 84 under a separate R&D project.

MILESTONES:

	FY 86	FY 87
Contract Award, Kits	1Q 86	1Q 87
Kit Delivery Starts	3Q 86	3Q 87

PROJECT FINANCIAL PLAN: (Amounts in Millions of Dollars)

FY 86	FY 87	TOTAL
Qty Cost	Qty Cost	Qty Cost
74 2.819	74 2.977	148 5.796

BASIS FOR COST ESTIMATE: (Amounts in Millions of Dollars)

FY 86	FY 87	TOTAL
Qty Cost	Qty Cost	Qty Cost

Kits:

74 2.819.	74 2.977	148 5.796
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METHOD OF IMPLEMENTATION: Installed at organizational level on an as required basis.

Kit Deliveries	FY 86	FY 87	FY 88	TOTAL
	1 2 3 4	1 2 3 4	1 2 3 4	
	4 20	25 25 25 25	24	148

DD FORM 1 Apr 78

Edition of 1 May 76, may be used.

P-1 SHOPP LIST
ITEM NO.
17/18PAGE NO.
1-57

CLASSIFICATION

EXHIBIT P-3a

NOE COMM-FM

PIP #1-80-01-0087

Exhibit P-3a

Page 2 of 2

BASIS FOR COST ESTIMATE: (Amounts in million of dollars)

	FY 85		FY 86		FY 87		FY 88		FY 89		FY 90		FY 91	
	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost
Nonrecurring Eng		1.322		.085		.039								
Airframe Kit			56	.513	134	1.290	114	1.151	75	.793	60	.666		
FM System			56	.577	134	.964	114	.800	75	.651	60	.546		
SINGARS System			48	.880	48	.924	48	.969	36	.761				
Production Incorporation							24	.171	48	.358	48	.375	48	.393
Field Application (OMA)					16	(.055)	40	(.139)	40	(.139)	53	(.184)	60	(.208)
TOTAL		1.322		2.055		3.217		3.091		2.563		1.587		.393

	FY 92		TOTAL	
	Qty	Cost	Qty	Cost
Nonrecurring Eng				1.446
Airframe Kit			439	4.413
FM System			439	3.538
SINGARS System			180	3.534
Production Incorporation	12	.104	180	1.401
Field Application				
(OMA)	50	(.173)	259	(.898)
TOTAL		.104		14.332

METHOD OF IMPLEMENTATION: Production Incorporation will begin with the 257th modernization aircraft. The other 'D' model aircraft delivered prior to that will have the retrofit kit applied by the contractor or depot teams.

CLASSIFICATION

REPORTS CONTROL SYMBOL DO-COMP (AR) 1002		AIRCRAFT MODIFICATION		DATE							
APPROPRIATION/BUDGET ACTIVITY		Aircraft	MODIFICATION TITLE AND NO.								
Procurement, Army/Activity 2, Modification of Aircraft			NOE COMM-HE, PIP #1-80-01-0086								
AIRCRAFT AFFECTED: CH-47D. (SSN: AA0250)											
DESCRIPTION/JUSTIFICATION: Type of Improvement - Improved Operational Capability. Incorporation of this system will provide non-line-of-sight, air-to-air, and air-to-ground voice communications at distances of up to 50 km to enhance mission performance by a aircrews operating in the nap-of-the-earth flight environment.											
DEVELOPMENT STATUS: Development and qualification testing will be conducted by the contractor.											
MILESTONES:											
		FY 86	FY 87	FY 88	FY 89	FY 90					
Engineering Initiated		1Q FY 86									
Contract Award, Kits		2Q FY 86	1Q FY 87	1Q FY 88	1Q FY 89	1Q FY 90					
Kit Delivery Starts		3Q FY 87									
Contract Award, Integration			1Q FY 87	1Q FY 88	1Q FY 89	1Q FY 90					
PROJECT FINANCIAL PLAN: (Amounts in millions of dollars)											
		FY 86	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92			
Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost		
51	2.119	140	3.189	140	3.476	48	1.637	60	1.986	.655	.173
Total											
Qty	Cost										
439	13.235										

BASIS FOR COST ESTIMATE: (Amounts in millions of dollars)

	FY 86		FY 87		FY 88		FY 89		FY 90	
	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost
Nonrecurring Eng		1.115		.119						
Airframe Kit	51	.428	140	1.234	140	1.294	48	.465	60	.609
HF System	51	.564	140	1.611	140	1.613	48	.575	60	.752
STE/PGSE		.012	24	.225	48	.569	48	.597	48	.625
Production Incorporation			27	(.175)	92	(.597)	92	(.597)		
Field Application (OMA)										
TOTAL		2.119		3.189		3.476		1.637		1.986

	FY 91		FY 92		TOTAL	
	Qty	Cost	Qty	Cost	Qty	Cost
Nonrecurring Eng						
Airframe Kit					439	1.234
HF System					439	4.030
STE/PGSE						5.115
Product Incorporation	48	.655	12	.173	228	.012
Field Application (OMA)					211	2.844
TOTAL		.655		.173		(1.369)
						13.235

METHOD OF IMPLEMENTATION: Production incorporation will begin with the 208th modernization aircraft. The other 'D' model aircraft delivered prior to that will have the retrofit kit applied by contractor or depot teams.

CLASSIFICATION

REPORTS CONTROL SYMBOL DD-COMP (AR) 1092	AIRCRAFT MODIFICATION		DATE Feb 1985
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Army/Activity:2	MODIFICATION TITLE AND NO. Hub Spring 1-84-01-1329		

AIRCRAFT AFFECTED: UH-1H/V (AA0600)

DESCRIPTION/JUSTIFICATION: Type of Improvement - Safety. The hub spring will reduce the amount of flapping (above 4 degrees) for a given flight condition, and will react the load between hub and mast in a gradually increasing manner rather than as an impact load. Some conditions under which large flapping angles can occur are mechanical failure within the rotor or rotor control system, low rotor RPM, high speed rear or sideward flight, large sideslip angles, low g maneuvers. This is a Department of the Army directed improvement.

DEVELOPMENT STATUS: A development contract was awarded to Bell Helicopter Textron on 14 Sep 84. First prototype should be available in 85 with flight tests starting in Feb 85. Based on the results of the transmission static test, the transmission bolt/lift link will have to be strengthened. Additional hardware cost per kit is estimated to be \$1000 to \$5585 (FY 85 dollars).

MILESTONES:

	FY 85	FY 86	FY 87
Production Contract Award	4Q85	1Q86	1Q87
Production Lead Time	8mo	8mo	8mo
Delivery Starts	2Q86	3Q86	3Q87
Installation Starts	3Q86	4Q86	4Q87

PROJECT FINANCIAL PLAN: (Amounts in thousands of dollars)

FY 84	FY 85	FY 86	FY 87	FY 88	TOTAL COST
-	1,900.0	12,200.0	8,550.0	-	22,650.0

UH-1 HUB SPRING
PIP NO. 1-84-01-1329

Exhibit P-3a
Page 2 of 2

BASIS FOR COST ESTIMATES: (Amounts in thousands of dollars)

	FY 84		FY 85		FY 86		FY 87	
	QTY	COST	QTY	COST	QTY	COST	QTY	COST
G-Meters								
Kits (Hub Spring)			271	144.0				
Engineering (OMA)			314	1,756.0	2061	12,200.0	1368	8,550.0
Publications (OMA)		(4,628.0)		(50.0)		(50.0)		
Install (Hub Spring)(OMA)			271	(144.0)	314	(190.0)	2061	(1,249.0)
Install (G-Meters)(OMA)			314	1,900.0	2061	12,200.0	1368	8,550.0

	FY 88		TOTAL COST	
	QTY	COST	QTY	COST
G-Meters				
Kits		-	271	144.0
Engineering (OMA)		-	3743	22,506.0
Publications (OMA)		-		(4,628.0)
Install (Hub Spring)(OMA)	1368	(829.0)	3743	(2,268.0)
Install (G-Meters)(OMA)		-	271	(144.0)
			3743	22,650.0

METHOD OF IMPLEMENTATION: Installation will be accomplished through retrofit by a contractor team.

	FY 86			FY 87			FY 88		
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	
Hub Spring Only									
Delivery Schedule		50	243	450	600	600	600	600	
Installation Schedule		100	214	522	530	530	530	530	257

CLASSIFICATION		AIRCRAFT MODIFICATION		DATE Feb 1985
REPORTS CONTROL SYMBOL DD-COMP (AR) 1092				
APPROPRIATION/BUDGET ACTIVITY Army/Activity: 2. Modification of Aircraft		MODIFICATION TITLE AND NO. EXTERNAL STORES SUPPORT SYSTEM	1-81-01-1934	

AIRCRAFT AFFECTED: UH-60A BLACK HAWK (AA0490)

DESCRIPTION/JUSTIFICATION: THE EXTERNAL STORES SUPPORT SYSTEM WILL PROVIDE THE CAPABILITY OF CARRYING EXTERNAL FUEL TANKS CONTAINING SUFFICIENT AUXILIARY FUEL TO SELF-DEPLOY THE BLACK HAWK OR FLY EXTENDED RANGE SPECIAL MISSIONS.

DEVELOPMENT/STATUS:

CONTRACT AWARD	FEBRUARY 1981
CRITICAL DESIGN REVIEW	SEPTEMBER 1981
FIRST FLIGHT	MARCH 1982
DEMONSTRATION COMPLETE	MARCH 1983

<u>MILESTONES</u>	<u>FY 84</u>	<u>FY 85</u>	<u>FY 86</u>	<u>FY 87</u>	<u>FY 88</u>	<u>FY 89</u>
PRODUCTION CONTRACT AWARD	4Q85	4Q85	2Q86	2Q87	2Q88	2Q89
FIRST HARDWARE DELIVERED	4Q86	4Q86	2Q87	2Q88	2Q89	2Q90
FIRST KIT APPLIED	1Q87	2Q87	2Q88	2Q89	2Q90	2Q91
APPLICATION COMPLETE		2Q88	2Q89	2Q90	2Q91	4Q91

PROJECT FINANCIAL PLAN: (AMOUNT IN THOUSANDS OF DOLLARS)

	FY 84		FY 85		FY 86		FY 87		FY 88		FY 89		TOTAL
	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY
1555.0	36	1483.0	96	4356.0	96	4576.0	96	4799.0	87	4190.0	411	20959.0	

	<u>FY 84</u>		<u>FY 85</u>		<u>FY 86</u>		<u>FY 87</u>		<u>FY 88</u>		<u>FY 89</u>		<u>FY 90</u>		<u>FY 91</u>		<u>TOTAL</u>	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
ARDWARE		37.0	36	1483.0	96	4356.0	96	4576.0	96	4799.0	87	4190.0					411	19401.0

PA 1518.0

(b)(4)

INSTALLATION

(OMA)

CATAL

METHOD OF IMPLEMENTATION: KIT APPLIED BY OLR CONTRACT TEAMS.

[illegible]

CLASSIFICATION

REPORTS CONTROL SYMBOL
DO-COMP (AR) 1002

AIRCRAFT MODIFICATION

DATE Feb 1985

APPROPRIATION/BUDGET ACTIVITY

1. Aircraft Procurement,
2. Modification of Aircraft

MODIFICATION TITLE AND NO.

HOVER IR SUPPRESSOR 1-81-01-1931

AIRCRAFT AFFECTED. UH-60A BLACK HAWK (AA0490)

DESCRIPTION/JUSTIFICATION: THE HOVER IR SUPPRESSOR SYSTEM BEING DEVELOPED UNDER RDT&E PROJECT NO. 1X46471DC52 FC2 PRODUCTION INCORPORATION ON THE BLACK HAWK AIRCRAFT WILL REDUCE THE VULNERABILITY TO HEAT SEEKING MISSILES OVER THE ENTIRE FLIGHT ENVELOPE, HOVER THROUGH MAXIMUM CRUISE AIRSPEED. AIRCRAFT ARE PARTICULARLY VULNERABLE AT HOVER OR WHILE FLYING MOE AT LOW AIRSPEEDS. HOVER IR SUPPRESSOR DEVELOPMENT WAS DIRECTED BY LETTER, ATZQ-D-HS, DATED 14 OCT 80, SUBJECT: PROPOSED UH-60A BLACK HAWK MATERIAL NEED, PRODUCTION, UPDATE (NN) (P) (U) 79 AUG CHANGE (CLASSIFIED).

DEVELOPMENT STATUS:

PERFORMANCE ENDURANCE THERMOCYCLE (PET) TESTING
BLACK HAWK 987 - MOD, INSTL/INSTR
STATIC & SHAKE TESTS
FIRST FLIGHT
DT II
OT II

- COMPLETE
- COMPLETE
- COMPLETE
- SEP 84
- MAY-AUG 84
- AUG-SEP 84

MILESTONES

	FY 85	FY 86	FY 87	FY 88	FY 89	FY 90
PROJECT INITIATED:	2Q85					
PRODUCTION CONTRACT AWARD	4Q85	2Q86	2Q87	2Q88	2Q89	2Q90
FIRST HARDWARE DELIVERED	3Q87	3Q88	2Q89	2Q90	2Q91	1Q92
FIRST KIT APPLIED	4Q87	4Q88	4Q89	2Q90	2Q91	1Q92
APPLICATION COMPLETE	4Q87	4Q88	4Q89	4Q90	4Q91	4Q92

HOVER IR SUPPRESSOR

EXHIBIT P-3a
Page 2 of 2

PIP # 1-81-01-1921

PROJECT FINANCIAL PLAN: (AMOUNT IN THOUSANDS OF DOLLARS)

	FY 85		FY 86		FY 87		FY 88		FY 89		FY 90		FY 91		TOTAL	
	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST
	558.0		32	4201.0	27	3732.0	167	24607.0	167	25790.0	192	29947.0	162	22639.0	747	111474.0

BASIS FOR COST ESTIMATE:

	FY 85		FY 86		FY 87		FY 88		FY 89		FY 90		FY 91		FY 92		TOTAL	
	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST
HARDWARE			32	4201.0	27	3732.0	167	24607.0	167	25790.0	192	29347.0	162	22639.0			747	110916.0
NONRECURRING																		
APA		558.0																558.0
(OMA)																		
INSTALLATION																		
(OMA)		(64.0)				(38.0)		(117.0)		(220.0)		(220.0)		(220.0)		(398.0)		(1213.0)
STOCK FUND		558.0	4201.0		3732.0		24607.0		25790.0		29947.0		22639.0					(64.0)
TOTAL																		111474.0

METHOD OF IMPLEMENTATION: KITS APPLIED BY OLR CONTRACT TEAMS.

	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92	TOTAL
DELIVERY SCHEDULE	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	747
INSTALLATION	29	12 2 13 13	41 42 42 42	41 42 42 42	41 42 42 42	41 42 42 42	747

CLASSIFICATION

REPORTS CONTROL SYMBOL
LD-COMP (AR) 1002

AIRCRAFT MODIFICATION

DATE Feb 1985

APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement,
 Army Activity: 2. Modification of Aircraft

MODIFICATION TITLE AND NO.

NIGHT VISION COCKPIT LIGHTING 1-81-01-1938

AIRCRAFT AFFECTED: UH-60A BLACK HAWK (AA0490)

DESCRIPTION/JUSTIFICATION: THIS MODIFICATION WILL PROVIDE THE UH-60A WITH A COCKPIT THAT IS COMPATIBLE WITH THE 3RD GENERATION NIGHT VISION GOGGLES. THE PROPOSED COCKPIT LIGHTING WILL IMPROVE NOE FLIGHT AT NIGHT.

MILESTONES

	FY 85	FY 86
PRODUCTION CONTRACT AWARD	3Q85	2Q86
FIRST HARDWARE DELIVERED	4Q85	1Q87
FIRST KIT APPLIED	2Q86	1Q88
APPLICATION COMPLETE	1Q88	1Q90

NIGHT VISION COCKPIT LIGHTING
PIP #1-81-01-1938 (UH-60A)

PROJECT FINANCIAL PLAN: (AMOUNT IN THOUSANDS OF DOLLARS)

	FY 84		FY 85		FY 86		FY 87		FY 88		FY 89		FY 90		TOTAL
	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	
	55	2003.0	210	6270.0	117	3494.0	275	7150.0	657	18917.0					

BASIS FOR COST ESTIMATE:

	FY 84		FY 85		FY 86		FY 87		FY 88		FY 89		FY 90		TOTAL
	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	
HARDWARE	55	1430.0	210	6270.0	117	3494.0	275	7150.0							657 18344.0
NONRECURRING APA				573.0											573.0
(OMA)				(858.0)		(976.4)									(1834.4)
(STOCK FUND)															
INSTALLATION															
(OMA)				(1308.0)		(1745.0)		(1745.0)		(280.0)					(6823.0)
TOTAL			2003.0	6270.0		10644.0									18917.0

METHOD OF IMPLEMENTATION: KITS APPLIED BY OLR CONTRACT FIELD TEAMS AND OVERHAUL FACILITIES.

	FY 85				FY 86				FY 87				FY 88				FY 89				FY 90				TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
KIT DELIVERIES					16	42	42	42	42	42	42	42	42	42	42	42	34	34	34	35					657
KIT INSTALLATIONS									42	42	42	42	42	42	42	42	42	42	42	27					657

CLASSIFICATION

REPORTS CONTROL SYMBOL DD-COMP (A) 1092	AIRCRAFT MODIFICATION		DATE Feb 1985
APPROPRIATION/BUDGET ACTIVITY Army Activity 2. Modification of Aircraft	Aircraft Procurement, Modification of Aircraft	MODIFICATION TITLE AND NO. IMPROVED AIRSPEED SYSTEM - 1-84-01-1971	

AIRCRAFT AFFECTED. UH-60A BLACK HAWK (AA0490)

DESCRIPTION/JUSTIFICATION: THIS MODIFICATION IS REQUIRED TO SAFELY OPERATE THE UH-60A AT GROSS WEIGHTS ABOVE 20,250 LBS. (UP TO 24,000 LBS.), WHICH IS REQUIRED FOR THE EXTENDED RANGE AND SELF-DEPLOYMENT CAPABILITIES WHEN EQUIPPED WITH THE UH-60A EXTERNAL STORES SUPPORT SYSTEM.

DEVELOPMENT STATUS.

MILESTONES	FY 84	FY 85	FY 86
PRODUCTION CONTRACT AWARD	2Q85	3Q85	3Q86
FIRST HARDWARE DELIVERED	3Q85	1Q86	4Q86
FIRST KIT APPLIED	3Q85	1Q86	1Q87
APPLICATION COMPLETE	4Q85	1Q87	1Q88

IMPROVED AIRSPEED SYSTEM

PIP # 1-84-01-1971 (UH-60A)

PROJECT FINANCIAL PLAN: (AMOUNT IN THOUSANDS OF DOLLARS)

	<u>FY 84</u>		<u>FY 85</u>		<u>FY 86</u>		<u>FY 87</u>		<u>TOTAL</u>	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
	49	63.0	204	285.0	217	271.0			470	619.0

BASIS FOR COST ESTIMATE:

	<u>FY 84</u>		<u>FY 85</u>		<u>FY 86</u>		<u>FY 87</u>		<u>TOTAL</u>	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
HARDWARE	49	63.0	204	285.0	217	271.0			470	619.0
NONRECURRING										
APA										
(GMA)										
INSTALLATION										
(OMA)										
(STOCK FUND)		(2.0)				(329.0)		(142.0)		(769.0)
TOTAL		63.0		285.0		271.0				(24.0)
										619.0

METHOD OF IMPLEMENTATION: KITS APPLIED BY OLR CONTRACT TEAMS.

	<u>FY 85</u>				<u>FY 86</u>				<u>FY 87</u>				<u>FY 88</u>				<u>TOTAL</u>			
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>				
DELIVERY SCHEDULE					49	62	62	63	63	63	45						470			
INSTALLATION					49	50	50	50	50	50	50	21					470			

CLASSIFICATION

REPORTS CONTROL SYMBOL
DD-COMP (AR) 1092

AIRCRAFT MODIFICATION

DATE Feb 1985

APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement,

Army/Activity: 2. Modification of Aircraft

MODIFICATION TITLE AND NO.

SINGCGARS RADIO 1-84-01-1980

AIRCRAFT AFFECTED: UH-60A BLACK HAWK (AA0490)

DESCRIPTION/JUSTIFICATION: THE SINGCGARS AIRBORNE RADIO DET, AN/ARC-201, IS A SOLID STATE SECURABLE TRANSRECEIVER INTENDED FOR FM TACTICAL OPERATIONS. THE AN/ARC-201 IS CAPABLE OF PROVIDING ECCM CAPABILITY AND REDUCED SUSCEPTIBILITY TO DIRECTION FINDING EQUIPMENT. THE AN/ARC-201 IS COMPATIBLE WITH THE CURRENT COMSEC (VINSON) EQUIPMENT AND IN NON ECCM MODE OF OPERATION. THE SINGCGARS RADIO IS INTEROPERABLE WITH EXISTING FM RADIOS. THE AN/ARC-201 OPERATES IN THE 30-88 MHZ RANGE AND HAS 2320 DISCRETE CHANNELS AT 25 KHZ SPACING. THE AN/ARC-201 IS COMPATIBLE WITH THE IMPROVED FM POWER AMPLIFIER AND PROVIDES FM HOMING CAPABILITY. THE AN/ARC-201 WILL REPLACE REMOTE MOUNTED AN/ARC-186 IN THE UH-60A #567 AND SUBSEQUENT AND WILL PROVIDE COMPATIBILITY WITH GROUND BASED SINGCGARS RADIOS.

DEVELOPMENT STATUS: A PRODUCT IMPROVEMENT (Pi) TEST WILL BE PREPARED BY THE CONTRACTOR AND APPROVED BY THE GOVERNMENT TO DEMONSTRATE THE ABILITY OF THE UH-60A INSTALLATION PROTOTYPE TO MEET ITS TECHNICAL REQUIREMENTS. TESTING CONDUCTED TO INSURE AIRWORTHINESS QUALIFICATION WILL INCLUDE, AS A MINIMUM, BENCH, PREFLIGHT, AND FLIGHT TESTING OF THE REMOTE RT-1477/ARC-201(V) INTEGRATION. ELECTROMAGNETIC COMPATIBILITY TESTING SHALL BE CONDUCTED TO ASSURE COMPATIBILITY THE REMOTE RT-1477/ARC-201(V) INTEGRATION WITH THE TOTAL UH-60A ELECTRICAL/ELECTRONICS SYSTEM.

MILESTONES

	FY 86	FY 87	FY 88
PRODUCTION CONTRACT AWARD	1Q86	1Q87	1Q88
FIRST HARDWARE DELIVERED		1Q88	3Q88
FIRST KIT APPLIED		2Q88	3Q89
APPLICATION COMPLETE		3Q89	3Q91

PIP # 1-84-01-1980 (UH-60A)

PROJECTED FINANCIAL PLAN: (AMOUNT IN THOUSANDS OF DOLLARS)

<u>FY 85</u>	<u>FY 86</u>	<u>FY 87</u>		<u>FY 88</u>		<u>FY 89</u>		<u>FY 90</u>		<u>TOTAL</u>	
<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
202.0	259.0	411	259.0	168	752.0			209	1312.0		

BASIS FOR COST ESTIMATES:

	<u>FY 85</u>		<u>FY 86</u>		<u>FY 87</u>		<u>FY 88</u>		<u>FY 89</u>		<u>FY 90</u>		<u>FY 91</u>		<u>FY 92</u>		<u>TOTAL</u>	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
HARDWARE					41	188.0	168	752.0							209	940.0		
NONRECURRING																		
APA		302.0		70.0														372.0
(OMA)																		
INSTALLATION				(23.0)						(32.0)		(130.0)		(41.0)				(226.0)
(OMA)				258.0											209	1312.0		

METHOD OF IMPLEMENTATION: MODIFICATION WILL BE ACCOMPLISHED BY CONTRACTOR/DEPOT TEAMS.

	FY 87	FY 88	FY 89	FY 90	FY 91
DELIVERY SCHEDULE	1' 2 3 4 — — — —	1 2 3 4 — — — —	1 2 3 4 — — — —	1 2 3 4 — — — —	1 2 3 4 — — — —
TOTAL					
209		20 20 25 25	25 25 25 25	19	
INSTALLATION	' ,	7 7 7 7	7 7 8 8	30 30 30 30	13 13 12
209					

CLASSIFICATION		AIRCRAFT MODIFICATION		DATE Feb 1985																																																																						
PORTS CONTROL SYMBOL DD-COMP (AR) 1092		MODIFICATION TITLE AND NO. Army Helicopter Improvement Program PIP 1-80-01-2115																																																																								
APPROPRIATION/BUDGET ACTIVITY																																																																										
Aircraft Procurement, Army/Activity: 2																																																																										
AIRCRAFT AFFECTED: OH-58A AHIP (A72200)																																																																										
<p><u>DESCRIPTION/JUSTIFICATION:</u> Type of Improvement - New Operational Capability. The Army Helicopter Improvement Program (AHIP) OH-58D will be provided by modification of OH-58A aircraft; including incorporation of Mast Mounted Sight (MMS), improvements in navigation/communication and nap-of-the-earth (NOE) flight performance. The MMS will provide a day/night target acquisition and laser designation capability. The improvements will provide adequate NOE flight performance in any environment in which the Army may be deployed, will enable better and more reliable communication between the scout crew command elements and supported ground units and aircraft, and provide increased accuracy of target locations at longer ranges. Also included will be space, weight and power allowance for future incorporation of the multi-application Air-to-Air Stinger. No significant impact to the environment is anticipated as a result of the proposed mission utilization of the AHIP aircraft and its related systems.</p>																																																																										
<u>DEVELOPMENT STATUS:</u> (RDTE Funded)																																																																										
<p>SSEB Complete Under Secretary of Army & Under Secretary of Defense (DRE) Decision Reviews Full Scale Engineering Development Contract Critical Design Review Initial Flight Demonstration In-Process Review DI/OT II Start Milestone III Decision</p>																																																																										
<table border="0"> <tr> <td></td> <td>FY83</td> <td>FY84</td> <td>FY85</td> <td>FY86</td> <td>FY87</td> <td>FY88</td> <td>FY89</td> <td>FY90</td> <td>FY91</td> </tr> <tr> <td>MILESTONES:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Long Lead Time Items</td> <td>JUL 83</td> <td>JUL 84</td> <td>3QFY85</td> <td>1QFY86</td> <td>1QFY87</td> <td>1QFY88</td> <td>1QFY89</td> <td>1QFY90</td> <td></td> </tr> <tr> <td>Contract Award</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Production Contract Award</td> <td></td> <td>SEP 84</td> <td>3QFY85</td> <td>1QFY86</td> <td>1QFY87</td> <td>1QFY88</td> <td>1QFY89</td> <td>1QFY90</td> <td>1QFY91</td> </tr> <tr> <td>Induction Starts</td> <td></td> <td>OCT 84</td> <td>4QFY85</td> <td>3QFY86</td> <td>2QFY87</td> <td>2QFY88</td> <td>2QFY89</td> <td>2QFY90</td> <td>2QFY91</td> </tr> <tr> <td>Delivery Complete</td> <td></td> <td>3QF'86</td> <td>1QFY87</td> <td>1QFY88</td> <td>1QFY89</td> <td>1QFY90</td> <td>1QFY91</td> <td>1QFY92</td> <td>4QFY92</td> </tr> </table>						FY83	FY84	FY85	FY86	FY87	FY88	FY89	FY90	FY91	MILESTONES:										Long Lead Time Items	JUL 83	JUL 84	3QFY85	1QFY86	1QFY87	1QFY88	1QFY89	1QFY90		Contract Award										Production Contract Award		SEP 84	3QFY85	1QFY86	1QFY87	1QFY88	1QFY89	1QFY90	1QFY91	Induction Starts		OCT 84	4QFY85	3QFY86	2QFY87	2QFY88	2QFY89	2QFY90	2QFY91	Delivery Complete		3QF'86	1QFY87	1QFY88	1QFY89	1QFY90	1QFY91	1QFY92	4QFY92
	FY83	FY84	FY85	FY86	FY87	FY88	FY89	FY90	FY91																																																																	
MILESTONES:																																																																										
Long Lead Time Items	JUL 83	JUL 84	3QFY85	1QFY86	1QFY87	1QFY88	1QFY89	1QFY90																																																																		
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Production Contract Award		SEP 84	3QFY85	1QFY86	1QFY87	1QFY88	1QFY89	1QFY90	1QFY91																																																																	
Induction Starts		OCT 84	4QFY85	3QFY86	2QFY87	2QFY88	2QFY89	2QFY90	2QFY91																																																																	
Delivery Complete		3QF'86	1QFY87	1QFY88	1QFY89	1QFY90	1QFY91	1QFY92	4QFY92																																																																	

Army Helicopter Improvement Program
PIR # 1-80-01-2115

PROJECT FINANCIAL PLAN (Amounts in millions of dollars)

FY83		FY84		FY85		FY86		FY87	
<u>Qty</u>	<u>Cost</u>	<u>Qty</u>	<u>Cost</u>	<u>Qty</u>	<u>Cost</u>	<u>Qty</u>	<u>Cost</u>	<u>Qty</u>	<u>Cost</u>
	28.4	16	185.4	44	204.4	56	210.6	60	248.5
FY88		FY89		FY90		FY91		TOTAL	
<u>Qty</u>	<u>Cost</u>	<u>Qty</u>	<u>Cost</u>	<u>Qty</u>	<u>Cost</u>	<u>Qty</u>	<u>Cost</u>	<u>Qty</u>	<u>Cost</u>
94	387.0	120	387.6	120	335.6	68	210.6	578	2198.1

BASIS FOR COST ESTIMATE: (Amounts in millions of dollars)

	FY83		FY84		FY85		FY86		FY87	
	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost
GFE - Engines (Adv Proc)		3.8		6.4		8.5		9.6		15.8
GFE - Comm/Nav Equip (Adv Proc)		3.0		9.1		12.0		13.5		22.2
Long Lead Time Items		21.6		23.8		26.7		28.7		43.8
Recurring				91.3		155.6		158.8		166.7
Nonrecurring				54.8		1.6				
TOTAL		28.4	16	185.4	44	204.4	56	210.6	60	248.5
	FY88		FY89		FY90		FY91		TOTAL	
	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost
GFE - Engines (Adv Proc)		21.1		22.0		13.0				100.2
GFE - Comm/Nav Equip (Adv Proc)		29.5		30.8		18.2				138.3
Long Lead Time Items		54.8		54.5		31.4				285.3
Recurring		281.6		280.3		273.0		210.6		1617.9
Nonrecurring										56.4
TOTAL	94	387.0	120	387.6	120	335.6	68	210.6	578	2198.1

	FY85	FY86	FY87	FY88	FY89
Inductions	1 2 3 4 4 5 6 14	1 2 3 4 15 15 18 18	1 2 3 4 20 15 15 15	1 2 3 4 15 19 21 25	1 2 3 4 29 30 30 30
Delever les		2 6 8 14	15 15 18 18	20 15 15 15	15 19 21 25

[illegible]

AIRCRAFT PROCUREMENT, ARMY

Section 6

Flight Simulator Procurement Program

1-77 February 1985

FY 86 BUDGET ESTIMATE

FLIGHT SIMULATORS PROCUREMENT PROGRAM

(Dollars in Millions)

APPROPRIATION: Aircraft Procurement, Army

System	Type	FY 83 & Prior		FY 84		FY 85		FY 86		FY 87		FY 88		Cost to Complete		Total Cost	
		Qty	Amount	Qty	Amount	Qty	Amount	Qty	Amount	Qty	Amount	Qty	Amount	Qty	Amount	Qty	Amount
UH-1 (SSNA0980) (2B24)(SSNA09500)	FS	23	59.9	-	-	-	-	-	-	-	-	-	-	-	-	23	59.9
CH-47 (2B31)(SSNA09100)	FS	4	42.2	1	22.2	-	8.4	-	16.9	-	-	-	-	-	15.7	5	105.4
AH-1 (2B33)(SSNA09300)	FWS	5	102.3	1	23.1	2	31.8	-	-	-	-	-	-	-	-	8	157.2
UH-60 (2B38)(SSNA09400)	FS	-	-	3	40.9	3	50.0	3	43.9	3	40.0	3	49.5	-	-	15	224.3
AH-64 (2B40)(SSNA09000)	FWS	-	-	-	26.9	2	67.8	4	70.8	-	11.4	-	-	-	-	6	176.9
GRAND TOTAL		204.4		113.1		158.0		131.6		51.4		49.5		15.7		723.7	

1-78 February 1985